FEBRUARY | 1958

products finishing

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Painting Without a Spray Booth — Page 44

pH Control Solves a Problem — Page 58

New Developments — Page 76

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Finishes on metal products

Today's builder's hardware is designed and manufactured to appeal to the modern family's taste . . functional but with a subtle touch of high style The Schlage Lock Company has always been a leader in the production of locks and hardware that are as modern as tomorrow.

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Plating, Polishing and Spray Finishing Plant: 227 Elm & Howe Sts., Waterbury 20, Conn.

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FEBRUARY, 1958

1	17	33	49	65	81	97	113	129	145	301-2nd Cov.	330	346	362	378	394	410	426	442
2	18	34	50	66	82	98	114	130	146	302-3rd Cov.	331	347	363	379	395	411	427	443
3	19	35	51	67	83	99	115	131	147	303-4th Cov.	332	348	364	380	396	412	428	444
4	20	36	52	68	84	100	116	132	148	304	317	333	349	365	381	397	413	429	445
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13	29	45	61	77	93	109	125	141	157	313	326	342	358	374	390	406	422	438	454
14	30	46	62	78	94	110	126	142	158	314	327	343	359	375	391	407	423	439	455
15	31	47	63	79	95	111	127	143	159	315	328	344	360	376	392	408	424	440	456
16	32	48	64	80	96	112	128	144	160	316	329	345	361	377	393	409	425	441	457

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1	17	33	49	65	81	97	113	129	145	301-2nd Cov.	330	346	362	378	394	410	426	442
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16	32	48	64	80	96	112	128	144	160	316	329	345	361	377	393	409	425	441	457

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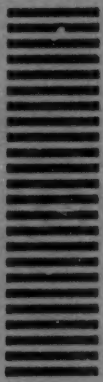

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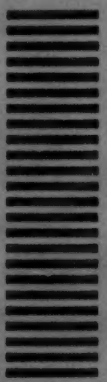

Platers find many uses for chelating *cleaner

*A chelating (pronounced key-lating) cleaner converts metallic salts and oxides into compounds soluble in water

By chelating and removing rust or heat scale at the same time that it removes oil, Oakite Rustripper combines pickling and alkaline cleaning into one operation. It also avoids disadvantages of acid pickling, such as hydrogen embrittlement and etching of machined surfaces.

Platers now use Rustripper for dozens of difficult steel-cleaning jobs. Here are some examples reported in recent weeks:

CALIFORNIA: "Rustripper has ended pickling damage such as embrittlement." (Removing oil and light rust from machined landing gears before cadmium plating.)

NEW YORK: "Now saving about $10.40 per day on removing rust and scale and producing brighter plate." (Rustripper, added to reverse current cleaner in automatic plating machine, has eliminated separate pickling of wire towel racks before nickel and chrome plating.)

CONNECTICUT: "Rustripper added to reverse current cleaner has eliminated troublesome smut from metal furniture prior to copper-nickel-chrome plating."

NEW YORK: "Small steel aircraft parts were embrittled by acid pickling. Rust, heat scale and stains are now safely removed by Rustripper and cyanide."

NEW JERSEY: "Only two cleaning rejects in first 15,000 parts plated." (After Rustripper was added to reverse current cleaner in automatic plater to eliminate smut from tubular steel furniture.)

INDIANA: "Rustripper is the best barrel compound we ever used for this job." (Removing tough heat treat scale from steel screws.) "Total cleaning and zinc plating time has been cut in half."

FREE A 14-page illustrated booklet called *"Here's the best shortcut in the field of electroplating"* tells about many ways in which Oakite Rustripper can be of great value in the plating shop. Write to Oakite Products, Inc., 20 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
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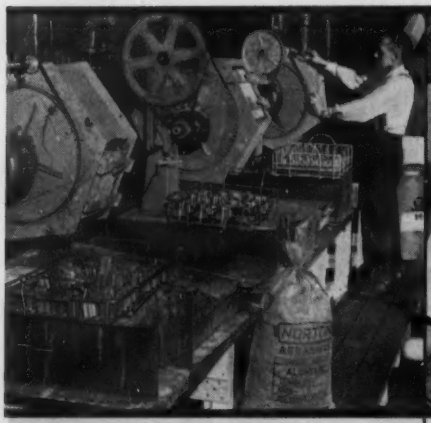
Money savers for all barrel finishing jobs



Small bench barrels with 7 cu. ft. capacity in production line operation. Alundum Tumblex "T" Abrasive is used for finishing irregular shapes.

A 4 cu. ft. capacity production barrel being unloaded after finishing operation. Thirteen cu. ft. production barrel shown in left background.

For finishing any part . . . in any barrel, large or small . . . there's an exactly right type and size of Norton TUMBLEX* abrasive

For lower costs in deburring, descaling and finishing parts to close tolerances, be sure to choose:

- *The right barrel equipment, available in a wide range of types and sizes.*
- *The right Norton TUMBLEX abrasive — made in four entirely different types, each in many different sizes and each engineered to add the "Touch of Gold" that brings lustre and boosts profits in finishing the widest variety of parts.*

Send samples of parts you finish — large or small, simple or intricate to our Sample Processing Department. We'll barrel finish, return samples, and tell you exactly the methods and abrasives you need to improve product quality and cut costs.

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G339

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ABRASIVES

Making better products . . . to make your products better

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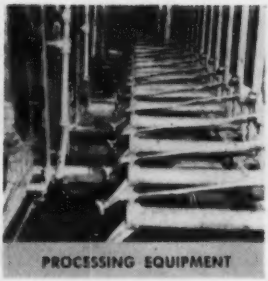
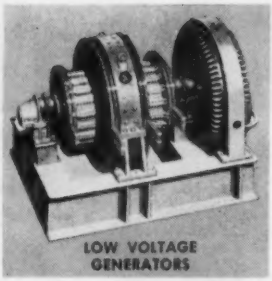
GERMANIUM AND SELENIUM RECTIFIERS



PROCESSING EQUIPMENT



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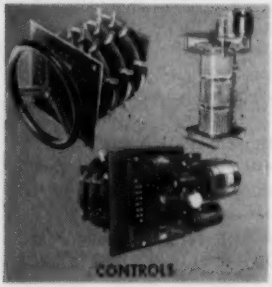
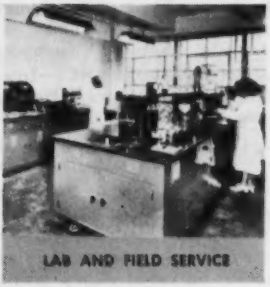


CONTROLS



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FINISHING SUPPLIES

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H-VW-M is your *one source* for supplies, equipment – and the best service anywhere!

Whether you're setting up a new aluminum finishing shop, or enlarging or modifying existing facilities, you can fill *all* your needs at H-VW-M. That's because H-VW-M is the one company combining a complete engineering service with a full line of equipment and supplies for modern aluminum finishing.

Here's an idea of what you can get, anytime, from H-VW-M:

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- **ALUMINUM FINISHING SUPPLIES** – new compounds, improved cleaners, and H-VW-M *"Job-Tailored"* Buffs, to give you top economy in every finishing step.
- **ENGINEERING SERVICE AND INSTALLATION** – *one responsibility*, all the way. H-VW-M engineers and technicians are specialists in anodizing equipment, with years of experience behind them.

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PLATEMANSHIP – Your H-VW-M combination— of the most modern testing and development laboratory—of over 80 years experience in every phase of plating and polishing – of a complete equipment, process and supply line for every need.

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for

CORROSION-RESISTANCE, PAINT BASE ON ALUMINUM AND MAGNESIUM

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Aircraft and Missile Parts

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Outdoor Furniture

Communications Equipment

Marine Equipment

EASE OF USE—Iridite is a simple chromate conversion treatment. Fast, easy, economical. Dip, brush or spray it on at room temperature. No special equipment. No specially trained personnel.

OUTSTANDING PERFORMANCE—Integral film can't flake, chip or peel. Takes paint firmly on initial application, and the bond lasts. Even protects areas scratched in use.

LOWEST COST—You have only minimum equipment cost, no special racks, high speed operation, lower overall handling costs.

CHOICE OF APPEARANCE—Clear coatings that retain metallic lustre to dark, maximum protection coatings. Dyes available, too.

IRIDITE #14 and #14-2 (Al-Coat) for ALUMINUM—Both provide excellent corrosion protection and paint base. Iridite #14-2 is an improved product that allows greater flexibility in operation and coating thickness and produces the optimum in corrosion protection. Either coating provides corrosion resistance superior to complicated electrolytic treatments in a fraction of the time. These coatings also have low electrical resistance, aid in arc-welding, provide a good base for bonding compounds, have no effect on the dimensional stability of close-tolerance parts. Choice of appearances ranging from clear through yellow iridescence to full brown. Red, green, blue, orange or yellow dyes available.

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products finishing

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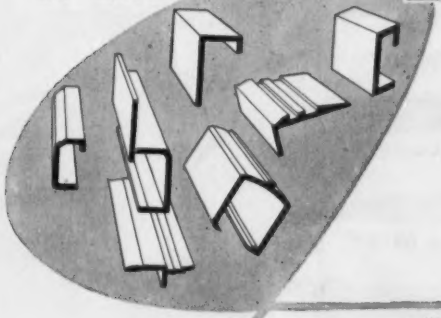

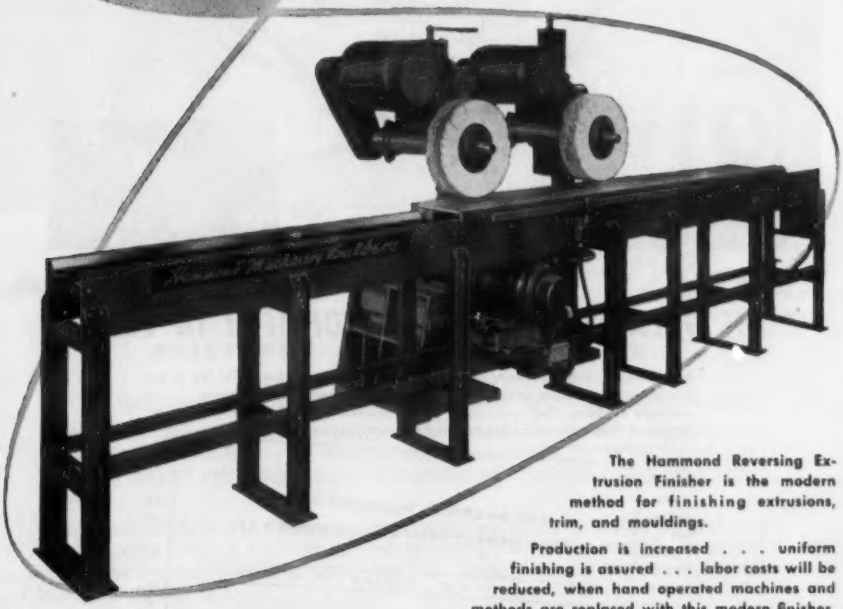

The Hammond Reversing Extrusion Finisher is the modern method for finishing extrusions, trim, and mouldings.

Production is increased . . . uniform finishing is assured . . . labor costs will be reduced, when hand operated machines and methods are replaced with this modern finisher.

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3 STANDARD SHAPES
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"TEAR DROP"
"DOG BONE"
ROLLED FLAT PLATE ANODE SECTION:
This Photomicrograph shows highly irregular, uncontrolled grain size—a major cause of shedding and resultant rough electrodeposits.
Note small, fully controlled regularity of grain size that promotes uniform corrosion, smoothest electrodeposits, less rejects.
APW EXTRUDED ANODE SECTION:

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The anodes are [illegible]

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polariz

The [illegible] en

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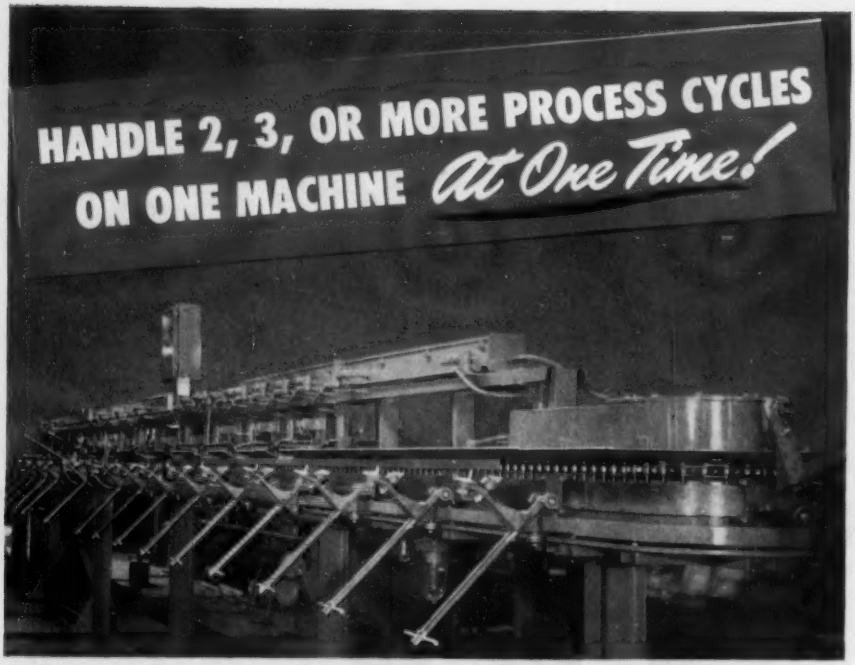

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A single Select-O-Matic plater, manned by one operator, will handle several various processes simultaneously. Different machines for each process are eliminated—original investment in equipment is greatly reduced—much less floor space is needed—maintenance is cut to an absolute minimum.

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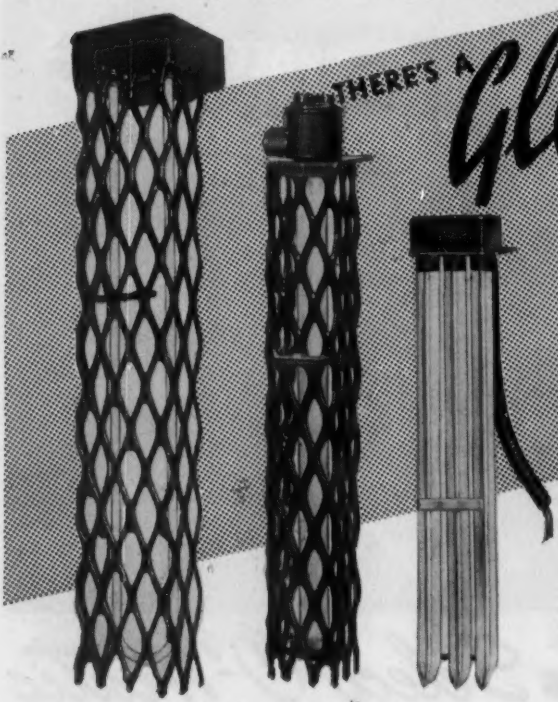

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If you're looking for
ACCURACY—EFFICIENCY—LONG LIFE—and ECONOMY
...you'll get it with Glo-QUARTZ!
Available from your Electroplating Distributor!

Glo-QUARTZ ELECTRIC HEATER CO., INC.
Trademark Reg. U.S. Pat. Off. WILLOUGHBY, OHIO Phone: Willoughby 2-5521

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Rock-bottom Costs on Booth-cleaning

LIQUID ENVELOPE #49-5396-2 H.D. ECONOMY

Strippable Spraybooth Coating

Here's the original strippable vinyl coating used for 10 years in finishing rooms throughout the world! Unmatched for low cost and excellent coverage!

Just spray H.D.ECONOMY on clean walls. It dries to touch in 10 minutes. When overspray accumulates, peel it off quickly in big pieces and sweep up. Booth-cleaning is finished in minutes. Costly overtime and non-productive down-time are cut to the minimum!

Start saving now! Send the coupon for this special offer . . . 5-gallon test-sample at drum-lot price.

BETTER FINISHES & COATINGS, INC.

268 Doremus Ave., Newark 5, N. J.

PAINTS · PLASTICS · CHEMICALS · BFC

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Gentlemen:

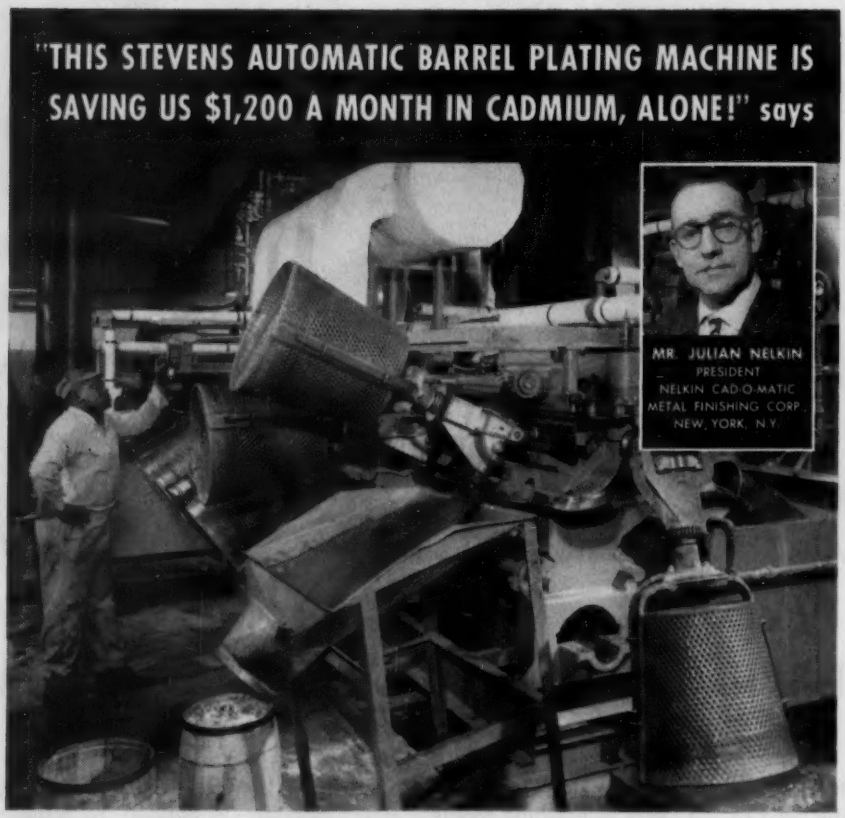
Send me a 5-gallon sample of Liquid Envelope #49-5396-2 H.D.ECONOMY and bill me at the drum-lot price.

NAME:_____

COMPANY:_____

ADDRESS:_____

"THIS STEVENS AUTOMATIC BARREL PLATING MACHINE IS SAVING US $1,200 A MONTH IN CADMIUM, ALONE!" says



Accurate plating – *not* overplating – *not* underplating . . . that's how Nelkin is saving $1,200.00 a month. Their Automatic is plating at the rate of 60,000 pounds a week. And, it's been doing it for over one year with *no* downtime whatsoever!

This is the kind of production and economy that Stevens' users have come to depend on. They know their Stevens Automatics will deliver *accurately – economically – dependably* – everytime!

If your present method of plating isn't giving you all these advantages, better call your local Stevens Representative right now! Let him show you the Stevens automatic barrel plating way to more profitable metal finishing!

Remember — When you go *automatic* . . . go STEVENS!

frederic b. **STEVENS,** inc.

DETROIT 16, MICH.

BUFFALO CHICAGO DETROIT CLEVELAND
DAYTON NEW HAVEN SPRINGFIELD (OHIO)

For more data circle 314 on Postpaid Card

New **DESPATCH** *installation*

Finishing EDSELS for Lasting Elegance!

Photo shows entrance to flow coater for finishing Edsel parts.

This inset photo shows exit of final car repair bake oven.

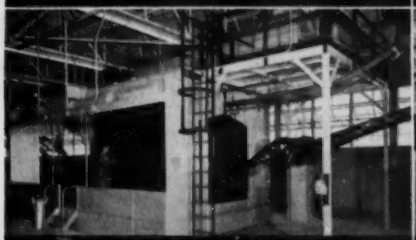


Photo shows water wash spray booth for painting frames.

Photo shows oven used in baking finish on Edsel wheels.

"Once you've seen it, you'll never forget it." That's what they're saying about Edsel . . . the exciting new member of the Ford family of cars . . . for plenty of reasons. Edsel's classic vertical grille . . . low wide flight deck . . . new V-8 engines . . . steering-wheel Teletouch Drive . . . self-adjusting brakes . . . just to mention a few features.

. . . and s-a-a-y . . . those elegant colors . . . like being kissed by a rainbow! Durable colors . . . to brighten the highways season after season.

Finishing Edsels is the exacting result of research and production experience of the company's engineers . . . plus technical assistance and equipment from experts like DESPATCH in the field of products finishing.

Latest equipment used in Edsel paint application . . . such as spraying or flow coating . . . and modern bake ovens for wheels or entire automobiles . . . are shown above in photographs of the new DESPATCH installation at the Ford Motor Company's Edsel Division, Rosemead Plant, Los Angeles, California.

Maybe you are launching a new product? Or wish to pep up appearance of an existing product? Whether you sell industry or Mr. and Mrs. Consumer, let DESPATCH's experience in evaluating, recommending and creating completely engineered finishing systems help solve *your* particular problems. There's a DESPATCH-trained resident engineer near you!

WRITE TODAY FOR BULLETIN 51C

DESPATCH OVEN COMPANY

619 S. E. Eighth St., Minneapolis 14, Minn.

Sales and Service in All 26 Principal Cities

PIONEERS IN ENGINEERING FINISHING SYSTEMS FOR INDUSTRY

For more data circle 315 on Postpaid Card

Why profits are bigger
when you plate with vacuum

1. Lower labor costs. Operating a CEC vacuum coater takes no special skills. Labor costs per piece are far lower than in traditional methods because the process is *fast*.

2. Eliminate buffing and polishing. A CEC vacuum coater lays down a surface that's bright without polishing. No further handwork is needed —just an easily applied protective lacquer.

3. Lower material costs. Ten cents worth of aluminum will vacuum-plate thousands of parts such as those shown here. Lacquers are relatively inexpensive, too.

Added durability

The *decorative* values of vacuum-plated finishes are well known. Now they can be remarkably durable, too. New coatings—recently developed epoxy lacquers, synthetic resins—can preserve those gleaming finishes indefinitely against abrasion, humidity, and other hazards.

To learn more about this new, and highly profitable process, write us for bulletins.

Consolidated Electrodynamics
Rochester Division, Rochester 3, N.Y.
formerly Consolidated Vacuum

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES
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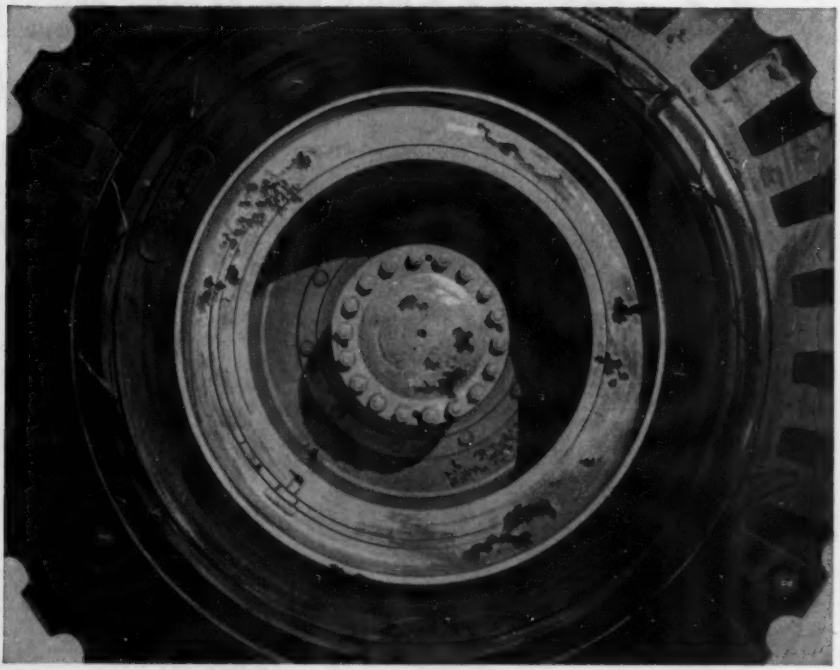
BETTER PROTECTION for metal surfaces



Isophthalic based paints last longer under severest conditions—*resistant to checking, peeling, chipping*

Now you can add years of protection to metal surfaces thanks to the adhesive properties of Isophthalic based paints. Better film to metal bond means improved performance with fewer prime coats required—saves time, cuts painting costs.

Surface coatings made with Isophthalic have better abrasion resistance than ordinary paints, hold up longer under severe weather conditions, provide improved gloss retention. Whether you buy exterior or interior paints, finishes for furniture or tough coatings for machinery it will pay you to find out about Isophthalic based paint.

ASK YOUR PAINT SUPPLIER about finishes, made from this new material—*Isophthalic.*

ORONITE CHEMICAL COMPANY

A SUBSIDIARY OF CALIFORNIA CHEMICAL COMPANY

EXECUTIVE OFFICES • 200 Bush Street, San Francisco 20, California
SALES OFFICES • New York, Boston, Wilmington, Chicago, Cincinnati, Cleveland, Houston, Tulsa, Los Angeles, San Francisco, Seattle
EUROPEAN OFFICE • 36, Avenue William-Favre, Geneva, Switzerland

4821

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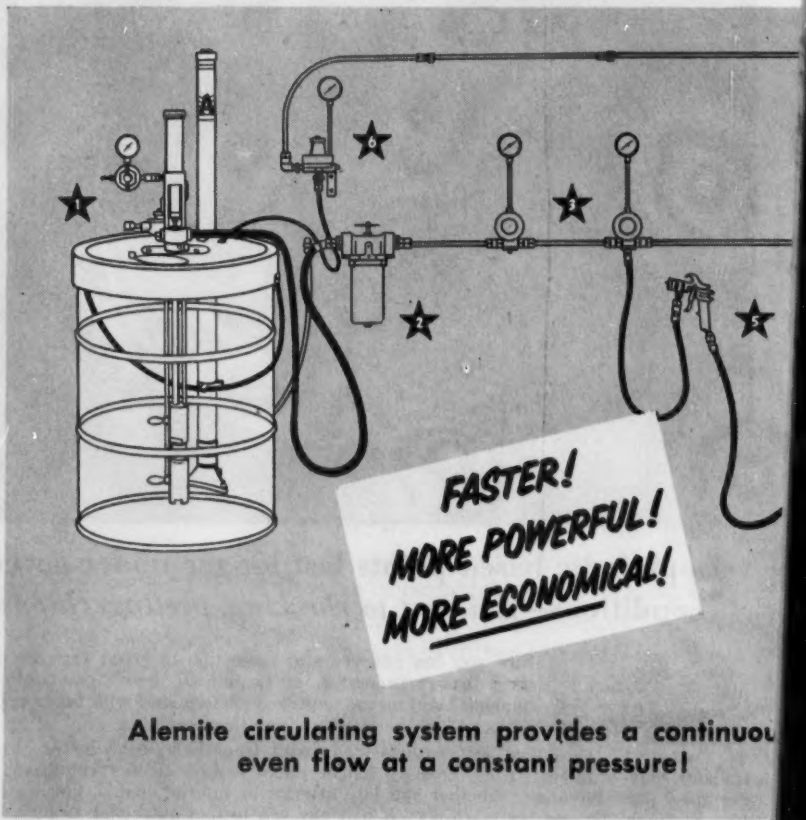
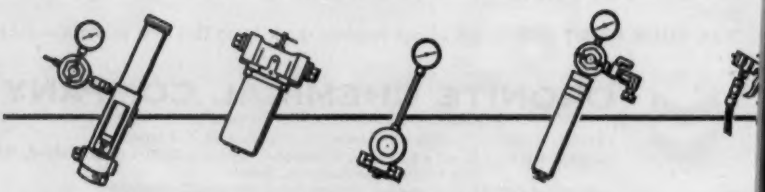
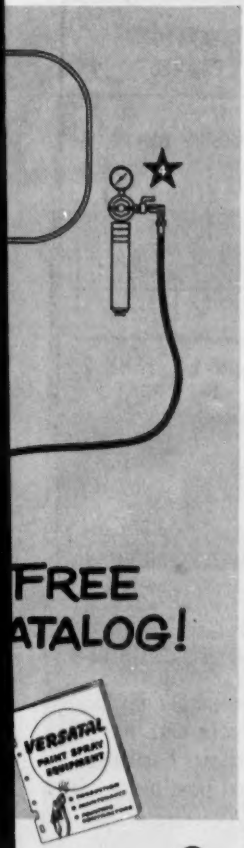
Complete ALEMITE Versatal
For all Sizes and Types of



Alemite circulating system provides a continuou even flow at a constant pressure!



Paint Spray Systems
Production Line Operations!



FREE
ATALOG!

1. Versatol paint pump with agitator and pump hoist. More powerful—moves paint up many floors . . . over longer distances. Paint is always mixed and ready to spray. Continuous circulation and agitation guarantee color uniformity and eliminate settling out of pigments. Ideal for multi-color set-ups.

2. Material filter, at pump outlet, removes all contamination from paint, such as pigment lumps, skins, and foreign objects that may be present in original container.

3. In-line fluid pressure regulator, at each paint station, regulates and holds pressure constant at spray head, with pin-point adjustment. Eliminates flutter and chatter regardless of pressure.

4. Air transformer removes oil, water and other foreign objects from air line. Insures clean, regulated air for paint atomization.

5. Spray gun handles a complete range of materials, from light lacquers to heavy synthetics, with ease. Compact . . . high-capacity. Available with either dual-control valve for individual control of both atomizing air and fan pattern, or with single-control valve for high-speed, long-run production.

6. End-of-the-line pressure regulator automatically maintains pressure in the main line . . . eliminates pressure surge in the system. Assures fully controlled, high-volume pressure.

For Free Versatol Catalog, write to:
Alemite, 1850 Diversey Parkway, Chicago 14, Ill.

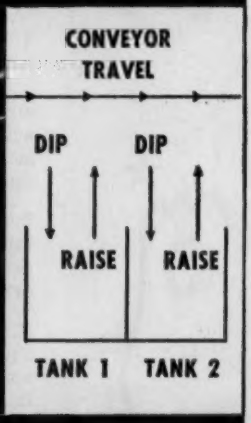
ALEMITE
DIVISION
STEWART-WARNER
CORPORATION

Symbol of
SW
Excellence

For more data circle 318 on Postpaid Card

CLEANING or PICKLING...

PRODUCTION *And* **RESULTS** **UP**



FLOOR SPACE *And* **COSTS** **DOWN**

with Cincinnati AUTOMATIC DIP-PROCESSING

If you're interested in dip-processing cleaning or pickling *in minimum space*, here's a production-proved solution that saves time, floor space and processing solutions. Straight-up, straight-down dipping of parts baskets traveling on a closed loop monorail conveyor means smallest possible tanks, important savings in floor space, too.

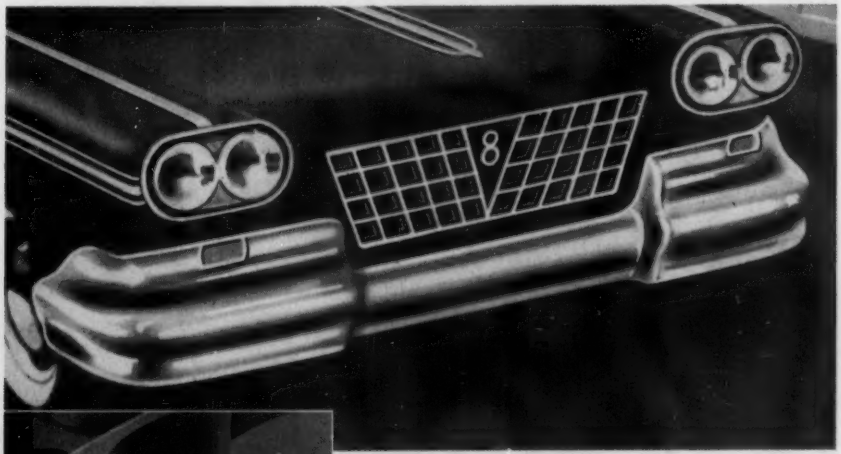
The operation is completely automatic, from first dip through conveyor unloading, can be used for any dip-processing sequence. In pickling processes, stainless steel, lead or rubber-lined tanks are provided.

For more information on this or a complete range of equipment for metal cleaning and finishing, write to: **Cincinnati Cleaning and Finishing Machinery Co., 2008 Hageman St., Cincinnati 41, Ohio.**

For more data circle 319 on Postpaid Card

For the finishing touch that means so much!

From high-powered automobiles to high-flying jet engine parts, Jewel Brand Coated Abrasives are bringing fast, economical grinding, smoothing and polishing methods to the manufacture of hundreds of precision products. It will pay you to bring their many advantages to bear on your finishing problems. Remember . . . end products **cost less** when you finish with Jewel Brand Abrasives. Order from your Industrial Distributor or write us for help with special applications.



JEWEL BRAND

COATED ABRASIVES

Belts • Rolls • Sheets • Discs • Specialties

ABRASIVE PRODUCTS, INC.

South Braintree 85, Massachusetts

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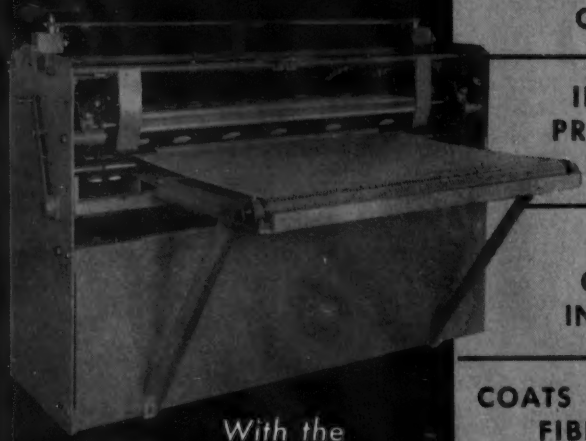
PRODUCE MORE! FASTER!



With the

GASWAY ROLLACOAT

UP TO 50% LESS PAINT COST

APPLIES MANY TYPES OF COATINGS

INCREASES PRODUCTION RATES

LOW ORIGINAL INVESTMENT

COATS WOOD, METAL FIBREBOARDS CARDBOARDS, PLASTIC

BETTER QUALITY FINISHES

HIGHER LABOR EFFICIENCY

SEND THIS COUPON TODAY OR WRITE FOR FULL DETAILS

GASWAY CORPORATION
6463 No. Ravenswood Avenue, Chicago 26, Illinois
Please send me complete information on Gasway Equipment for rollercoating

Name_____ Title_____
Company_____
Address_____
City_____ State_____

GASWAY CORPORATION
6463 No. Ravenswood Ave.
Chicago 26, Illinois

For more data circle 321 on Postpaid Card

FREE *new* BOOKLET *tells how to get* BETTER PAINT ADHESION

MAIL COUPON TODAY

TURCO PRODUCTS, INC.
6135 South Central Ave., Los Angeles 1, Calif.

Please send me your free phosphating booklet and ready reference chart.

NAME_____

TITLE_____

FIRM_____

ADDRESS_____

PF

Complete PHOSPHATING Reference Chart Includes:

- Description of phosphating
- Diagram of how phosphating holds paint to metal
- Illustrations of what phosphating can do
- Types of coatings available
- Recommended uses
- Applicable Government Specifications
- Methods of application and equipment requirements
- Metals to be used on
- Coating weights
- Detailed operation cycles

Here...in the free Turcoat phosphating booklet...is the best solution to any paint adhesion problem. This new booklet describes the *complete* line of Turcoat materials—the coating compounds that assure *permanent* paint adhesion, slash rejects, require less complicated controls and are more economical to buy and use.

Only Turco offers a truly full line of government approved coating materials for use in *any* conceivable processing set-up prior to the use of organic finishes. Only Turco offers a staff of 160 technically trained representatives located in all parts of the country to give immediate 'round-the-clock service. No wonder Turco is adding new phosphating accounts at a phenomenal rate. There are many reasons why, when it comes to *paint adhesion*, more and more industrial concerns are turning to the Turcoat line. The Turcoat booklet lists them all.

Offices in all Principal Cities

TURCO PRODUCTS, INC.
Chemical Processing Compounds
6135 SOUTH CENTRAL AVENUE, LOS ANGELES 1, CALIF.
Factories: Newark, Chicago, Houston, Los Angeles, London, Rotterdam, Sydney, Mexico City, Naha (Okinawa)
Manufactured in Canada by B. W. Deane & Co., Montreal

For more data circle 322 on Postpaid Card

Capitol Records cuts costs and simplifies plating of record masters with "Plus-4" Anodes

In its big, modern plant at Scranton, Pa., Capitol Records, Inc., produces record masters by acid-copper electroplating. To improve and simplify this critical step in making its high-quality popular and classical records, Capitol tried "Plus-4"® Anodes, Anaconda's phosphorized copper anodes. Chemical Engineer T. Melioris reports these operating results:

1. Material savings. Because there are no free particles of copper in the solution from "Plus-4" Anodes – sludge losses were cut 90%—copper sulfate build-up in the solution was drastically reduced. There has been an annual saving of several thousand pounds of salts and a big reduction in the amount of acid required.

2. Maintenance savings. In tanks using "Plus-4" Anodes, solutions are tested only every other week compared with twice a week for ordinary anodes. "Plus-4" Anodes need not be removed from the tank after plating is completed, as they do not continue to give off copper crystals to the solution after the current is stopped. Less frequent cleaning of tanks to remove sludge.

3. Smoother, denser deposits in tanks with "Plus-4" Anodes because there are relatively few finely divided copper particles suspended in solution.

Write for information on how you can obtain a test quantity to supply one tank. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. 87145 Rev.

ANACONDA®

"PLUS-4" ANODES Phosphorized Copper

Made by The American Brass Company for use under Patent No. 2,689,216

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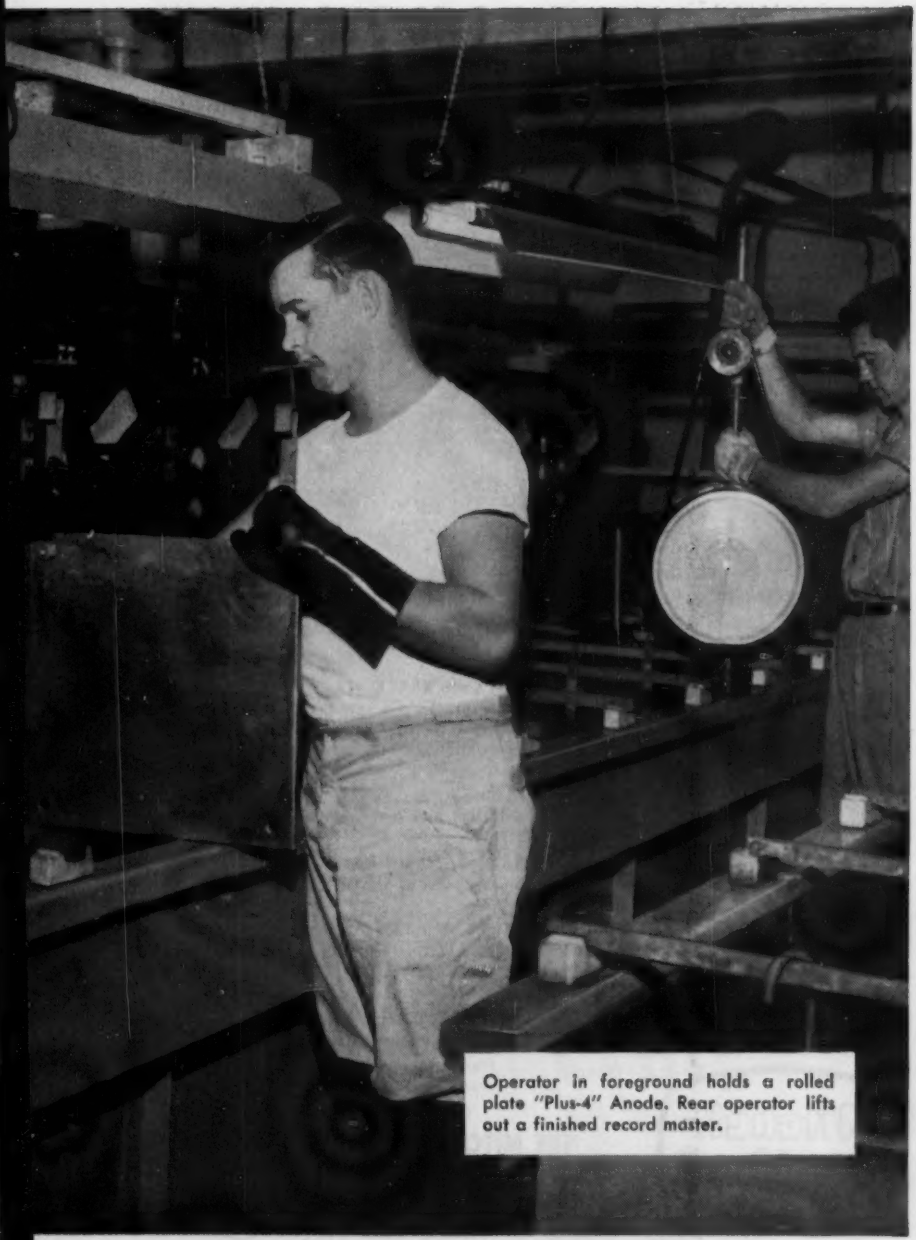

Operator in foreground holds a rolled plate "Plus-4" Anode. Rear operator lifts out a finished record master.

If your next move is to
BLACK OXIDE Finish

Make it to . . .

BLACK MAGIC

"The one-bath black-oxide process"

Important advantages make BLACK MAGIC (type A) for Steel and Iron the blackening process you have been seeking for trouble-free, economical operation. If you are contemplating a change in present procedure, or are about to set up a blackening cycle, consider these points:

- **BLACK MAGIC** process requires only 1 bath, 1 salt! Yes, the same salt mixture that makes up the initial solution is used to replenish dragout.
- **LOWER OPERATING TEMPERATURE!** Type A solution is operated at a boiling point of only 290 F. This saves on drag-out, heat consumption.
- **MORE CORROSION RESISTANT!** BLACK MAGIC has high absorption and adsorption qualities for oils and waxes normally used as a final finish dip. This characteristic gives infinitely higher corrosion resistant qualities to the finished part.
- **FASTER BLACKENING CYCLE!** Use of BLACK MAGIC can decrease blackening time cycles 15 to 20%.

Our laboratory is available for processing representative samples. Send us your problem!

Mitchell-Bradford

THE MITCHELL-BRADFORD CHEMICAL CO.

Wampus Lane Milford, Conn.

QUALITY PRODUCTS OF CHEMICAL RESEARCH

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PRODUCTION MORE THAN TRIPLED . . .
PAINT MILEAGE INCREASED 75% WITH

Ransburg NO. 2 PROCESS

One Ransburg reciprocating disk uniformly coats 7 complete sets of gasoline pump housings and parts per gallon of paint. Former hand spray produced only 4 sets per gallon.

● Bowser, Inc. Fort Wayne Division is continuously on the lookout for improved manufacturing methods in the production of their quality line of gasoline pumps.

That's why they modernized their finishing department . . . installed a conveyor . . . new oven . . . and replaced hand spray with one RANSBURG No. 2 PROCESS reciprocating disk unit.

RESULTS? Paint mileage increased 75% with less labor. With hand spray, they painted enough pump housings and parts for 4 pumps per gallon of paint. Now, with *Electrostatic*, they're painting 7 complete pump sets per gallon.

Where Bowser formerly needed two shifts in finishing, one shift now handles even greater production. With hand spray and limited oven facilities, they used to turn out 15 sets per hour. Now, they can paint 55 sets an hour, either prime or finish. Color changes are made quickly and easily with Ransburg equipment, and because of its efficiency in operation, maintenance cost in the paint area is cut 50%.

No Reason Why You Can't Do It, Too!

Whatever your product, if it's painted, we'd like to tell you more about the worthwhile savings and advantages which can be yours with RANSBURG ELECTROSTATIC PAINTING PROCESSES. Write for our No. 2 Process brochure which cites numerous examples of electrostatic spray painting on a wide variety of products.

Ransburg ELECTRO-COATING CORP.

RANSBURG

Indianapolis 7, Indiana

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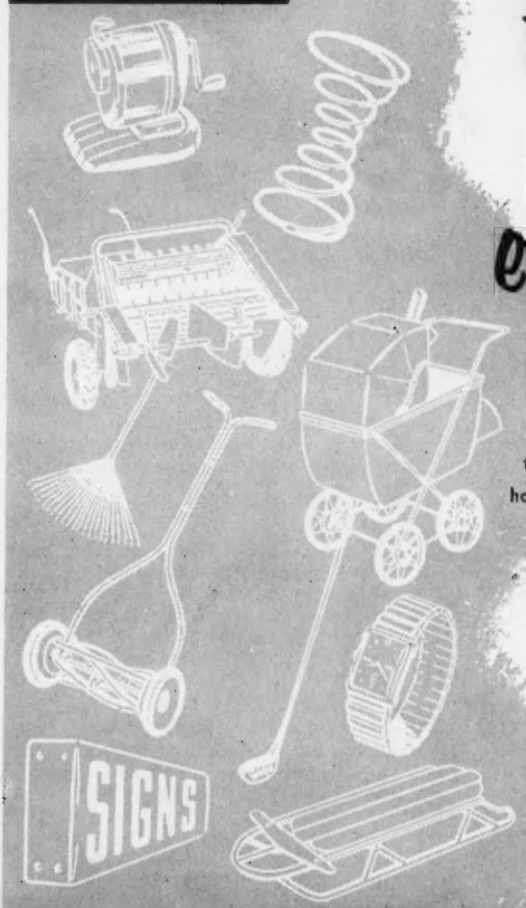
KOCH

CONVEYORIZED SYSTEMS ARE USED TO

finish almost everything



The manufacture of finishing systems is the specialty of George Koch Sons, Inc. They know the problems **and** the answers! Learn how you can improve your production and your product with a Koch engineered, Koch built finishing system in your plant. Call us . . . no obligation. We will make a free appraisal of your finishing system requirements.

PHONE, WIRE OR WRITE!

GEORGE KOCH SONS INC.

Evansville 4, Indiana

CHICAGO OFFICE, Merchandise Mart

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Photo courtesy Adrian Rack Co., Adrian, Mich.

What coating comes up with proof of service?

Unichrome Coating 218X, of course!

FOR 10 YEARS now, Unichrome Coating 218X has been saving on rack maintenance. In fact, this non-contaminating vinyl plastisol coating has lasted as long as 6 years in daily use on one set of racks without chipping, tearing or blistering! Platers agree that *using such unmatched quality right from the start saves most money in the long run.*

Free-rinsing and extremely durable, Unichrome Coating 218X gives trouble-free service in the harshest plating and cleaning operations, even those with vapor degreasing cycles. Apply it yourself, or write us for names of nearby expert applicators.

Member, Vinyl Dispersions Division of the SPI

First name in plastisols for all plating purposes...

UNICHROME

METAL & THERMIT
CORPORATION
General Offices: Rahway, New Jersey
Atlanta, Pittsburgh, Detroit, E. Chicago, Los Angeles
In Canada: Metal & Thermit-United Chromium of Canada, Limited, Rexdale, Ont.

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2-BEARING EXTENDED SPINDLE TYPE

CHECK ON THE

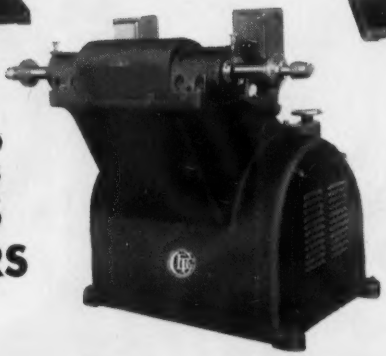
COMPLETE

LINE!

4-BEARING WIDE TYPE

63 STANDARD TYPES & SIZES

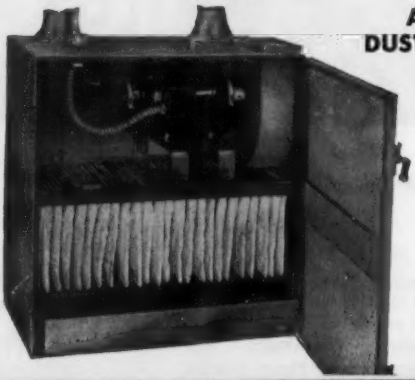
BUFFERS POLISHERS



DOUBLE MOTOR DOUBLE SPINDLE OVERHUNG PEDESTAL TYPE

Featured Nation-wide by Leading Distributors. Write for Catalogue TODAY!

Also, makers of a complete line of pedestal and bench grinders and buffers, speed lathes, dust collectors and cut-off machines.



AIRMASTER DUST COLLECTORS

Bag Type (as shown) Also Cyclone Type

THE CINCINNATI ELECTRICAL TOOL CO.

326 MT. HOPE AVE. • CINCINNATI 4, OHIO

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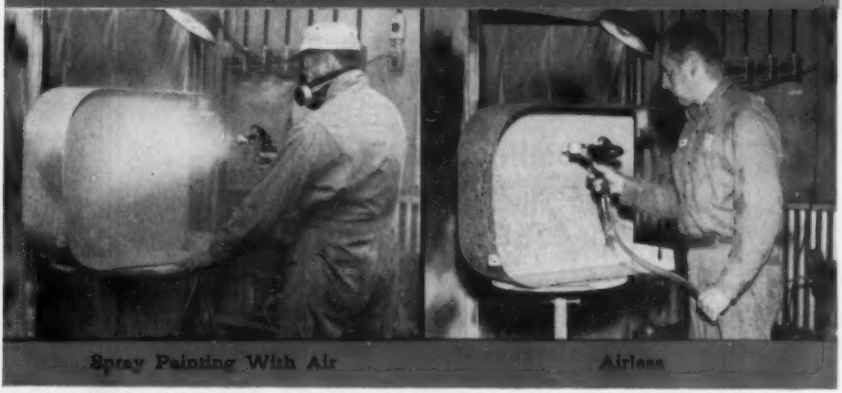
airless*

SPRAY COATING

*Spray Painting Without Air



Spray Painting With Air — Airless

This new spray painting process (without air) will minimize your over-spray problems, reduce health and fire hazards, cut maintenance and clean-up costs, save paint, time and labor as well as reduce your auxiliary painting equipment requirements.

Over and above these advantages . . . a Better Finished Product is the final result.

Write for Airless Spray Painting brochure.

NORDSON CORPORATION

FORMERLY BEDE PRODUCTS CORPORATION

THE BEST IN SPRAY COATING EQUIPMENT

AMHERST, OHIO — YUKON 8-4473

In Canada: 864 Pape Ave., Toronto, Ontario

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INDUSTRIAL
OVENS OF ALL TYPES

SPECIAL PROCESS OVENS

•

CONVEYORIZED FINISHING SYSTEMS

•

BATCH FINISHING SYSTEMS

•

ALUMINUM AGEING OVENS

•

CORE BAKING OVENS

•

FLUX DRYING OVENS

Continuous Strip Wire Baking

•

LABORATORY OVENS

Cabinet Portable

Write for specific information
to meet your specific requirements

INDUSTRIAL OVENS, INC.

13811 TRISKETT ROAD CLEVELAND 11, OHIO

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That's Me!

A Timely Message on
Therapeutic Leisure for Dogs

(especially German Shepherds)

by Sox von Liebestraum Sax
Ex Detroit Rep. and Assistant to
Ben P. Sax, Chairman of the Board
American Buff Company

All work and no play makes "Sox" a very dull dog, German Shepherd or not. Of course, I don't have as much time for recreation as I used to before I started running American Buff Company single pawed

For this reason, therapeutic use of leisure time is quite vital to me. And there is nothing that irritates me more than some of the snide tricks humans try to pull on us dogs.

For example, a few years back it was my custom to play chess with American Buffs as chessmen. One day, my father, Stan Sax, our Sales Master, tried to substitute some other buffs. Naturally, I refused to play—anyone knows what *they'll* do to your game. Of course, Stan was only kidding, but it ruined my whole day.

If you're looking for something therapeutic for your buffing problems, your next step is clear. Get in touch with American Buff Company. I'd be delighted to give you "personal" attention.

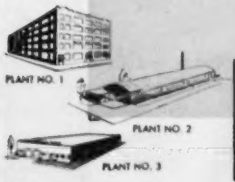
Cordially,

Sox von Liebestraum Sax

"For the Job that's TOUGH... use an AMERICAN BUFF"

World's Largest Manufacturer of Buffs and Polishing Wheels for Every Finishing Operation.

PATENTED CENTERLESS OR PERMANENT CENTER CONSTRUCTION



American Buff Company

2414 S. LaSalle St., Chicago 16, Illinois • CAlumet 5-1607

AMERICAN BUFFS ARE REGULARLY ADVERTISED IN FORTUNE MAGAZINE

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Cowles Ty-Bond Zinc Phosphate Coatings give your paint, enamel, lacquer, or other finishes a base to grab and hold.

BUT IT WON'T WASTE PAINT

Cowles Ty-Bond Coatings are smooth to the touch. No deep crevices to fill. No high ridges to cover.

Gives you controlled grain structure for better adhesion without waste.

Examine this panel yourself. Send this coupon and get your Ty-Bonded Test Panel.

Cowles Chemical Company
7016 Euclid Avenue, Cleveland 3, Ohio

Send me a Ty-Bond Test Panel

Name_____

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editorial

February, 1958

Accurate Specifications: A Shared Responsibility

Many complex products and processes are used in today's finishing industry. Therefore, specifications have become more important, and full cooperation between seller and buyer in detailing specifications is imperative.

Finishing equipment is supplied in a number of designs, and cannot be completely standardized. The customer must be given complete information about each machine and its operating characteristics in order that he may select the machine that best fills his need.

Sometimes the equipment user does not know exactly what type of equipment he should buy. The supplier can help the user decide by describing his products in advertising, and by means of personal calls. In many cases the equipment manufacturer can make suggestions which will result in significant savings.

Paint users, for instance, should tell paint manufacturers just what is expected in the way of properties, application characteristics and service requirements.

Plating engineers and their suppliers have a particularly complicated problem, because the equipment must be designed to conform with a certain process cycle. Plating equipment should also have some flexibility to make possible future process changes. This situation requires close cooperation between user and supplier.

Process engineers who have the task of setting up a paint finishing system must spell out in detail the type of finishing equipment they need. Having this information, equipment manufacturers can submit comparable bids, and deliver machines that will do a good job economically.

Job platers and paint finishers also have to be specification conscious. They must have a clear understanding of exactly the quality of finish desired by their customers. Otherwise they cannot bid competitively, and produce satisfactory work.

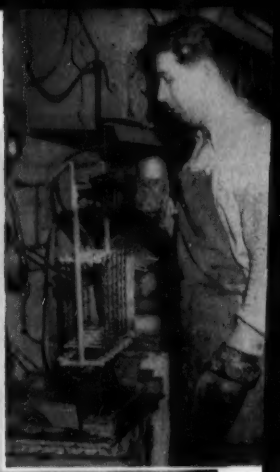
Many specifications for finishes, tests to evaluate finish quality, and recommended finishing procedures have been developed and adopted as Standards by the American Society for Testing Materials. But the specs don't always end the finisher's problems. There may be great differences in two products, both of which meet specification requirements. The choice between the two may be the difference between making and losing money.

Misunderstandings about specs are often just carelessness. Seller and buyer should "go the second mile" to understand one another. Remember: What seems self-evident to you may need to be "spelled out" in detail for the Other Fellow!

Ezra A. Blount

—EDITOR

Plating and Paint Decorating Zinc Die Castings



Job plating shop provides engineering design service, supplies complete parts according to customer's requirements. Operations performed include specification plating, paint decorating or finishing, and sub-assembly.

By EZRA A. BLOUNT
Editor

products feature finishing

ROTH PLATING CORPORATION, South Bend, Indiana, now occupies a three-story building with 25,000 square feet of floor space and boasts 100 employees as evidence of 10 years of growth and expansion. Founded in 1946 by Eugene Roth, Louis Ragues, Herman Miller and Edward Merrill, the company supplies engineering service as well as a plating and manufacturing service to the automotive and appliance industries. Thus, the company's operation is not drastically affected by conditions in any one area, or any one industry, or any one plant.

Zinc base die castings are the principal products processed. Roth Plating purchases the die castings, performs the necessary machining, drilling, and tapping, followed by polishing, buffing, plating to specifi-

Eugene Roth, president of Roth Plating Corporation is a graduate mechanical engineer with broad experience in the design and plating of die castings. He is a past president of the St. Joseph Valley Branch, A.E.S. ←

Louis Rague, vice president of Roth Plating Corporation, is a graduate chemical engineer whose industrial experience has all been in the electroplating field. Mr. Rague is librarian of the St. Joseph Valley Branch, A. E. S. These men combine the talents and experience which are needed to operate a successful job plating shop. →

cations, painting or paint decorating, sub-assembly as required, packing and shipping. Combinations of metals plated are generally copper-nickel-chromium, copper-nickel-gold, copper-nickel-brass, or copper-nickel-copper.

On copper and brass final coats, a clear lacquer or synthetic finish is used after plating. Nickel plated parts sometimes receive a gold-tinted clear lacquer coating to produce a gold effect. Parts finished in gold receive no other finish. Some parts receive a paint decoration, sprayed through special masks, or applied by special rubbing or wiping methods. The plant also performs phosphatizing and painting of die castings as required by customers.

Production Facilities

The three floors of the plant are laid out for efficient flow of material, and are connected by Tipp Cable-Way transport conveyors. Polishing and buffing are performed on the lower floor. Incoming parts are unloaded on a dock outside the building. The parts, in boxes, are fed down a chute into the basement for machining, barrel tumbling, polishing, or buffing.

Roth barrel finishes some parts to produce a uniform surface for plating and removes burrs or other casting imperfections. The parting lines must be removed from many die castings by polishing on 180- or 220-grit abrasive belts, prior to buffing. For many parts, buffing on semi-automatic buffing machines is the first finishing operation.

The choice of cloth buffs used is governed by the shape of the part to be finished. For parts of generally uniform surface, the company uses H-VW-M Ruffl-Buffs because they have the stiffness desirable for this type of operation. For parts with uneven surfaces, Unit Buffs (American Buff Co.) are used because of their greater flexibility.

Acme semi-automatic fixtures hold castings during semi-automatic buffing. An Acme 2-wheel indexing machine buffs small, round parts. Hanson-Van Winkle-Munning Liquimatic liquid tripoli is sprayed on the buffs in the semi-automatic setups. H-VW-M bar tripoli is used in hand buffing.

". . . the duplication in facilities has many operational advantages."

A Tipp cable conveyor (one of three conveyors in the plant) passes behind the operators in the buffing room. The buffed parts, hung on racks, or laid in trays, are carried up to the racking area on this conveyor. Here parts are removed from the buffing conveyor, mounted on racks for plating, and hung on the transport conveyor, which carries them to the plating area (Fig. 1).

The plating department is split into four sections. These four plating areas are somewhat similar in function, but the duplication in facilities has many operational advantages. Using this system, three or more finishes can be obtained at the same time on a production basis. These are:

1. Medium-thickness copper and nickel plate and final chromium on parts for indoor service.
2. Heavy copper and nickel deposits and final chromium on parts for outdoor service.
3. Specialized finishes.

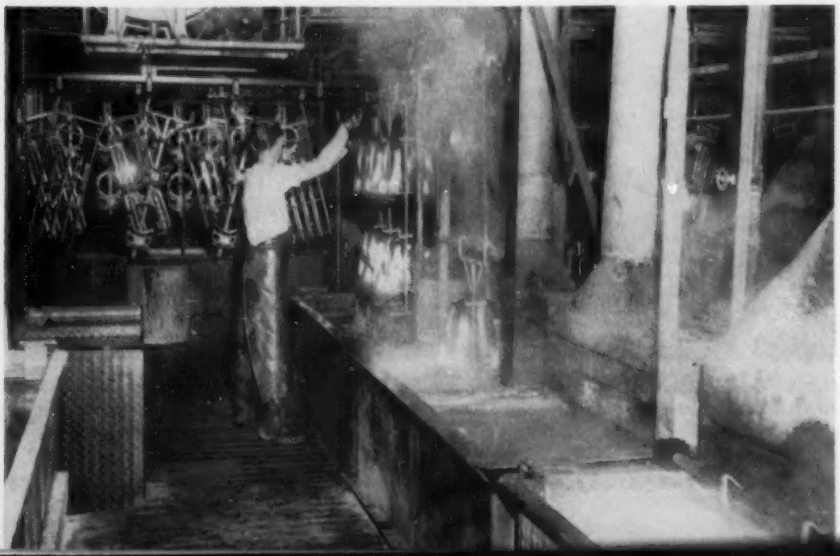
Electroplating Process

The process cycle employed for copper-nickel-chromium plating of zinc die castings is as follows:

1. Soak in a mixture of mineral spirits and Northwest 230 additive.
2. Soak clean in a boiling "Lo-pH" mixture of Northwest 45 (2½ oz./gal.) and Northwest 230 (1 fl. oz./gal.). A power-operated slusher moves the racked parts rapidly up and down in the boiling cleaner (Fig. 2). This removes packed buffing compound from depressed areas and crevices.
3. Hot water rinse.
4. High-pH electrocleaner. Northwest No. 37 (8 oz./gal.). Reverse current. Boiling. Time, 30 seconds to 1½ minutes.
5. Cold water rinse.
6. Dip in 2 per cent sulfuric acid (by volume) containing 1 pint/100 gal. Acid Addition Agent No. 6. This cold dip aids in securing a uniform deposit on unbuffed areas of parts.
7. Cold water rinse.
8. Copper strike for 30 seconds to 1½ minutes in solution containing 2-3 oz./gal. copper cyanide, 1 oz./gal. free cyanide, 4-6 oz./gal. sodium carbonate; operated between 140 and 160 deg. F.
9. Bright copper plate for 20 to 30 minutes in Lea-Ronal Copper-Glo bright copper solution. Current density, 15 a.s.f. Temperature, 160 deg. F. Cathode rod agitation 18 ft./min. maximum, with a 6-inch stroke. Copper anodes are bagged. Tank is heated with stainless steel Platecoil. Anode rods are located under the level of the solution to gain positive contact between anode hooks and anode rods.
10. Cold water rinse.
11. Electroclean in boiling solution of Northwest No. 470

Fig. 1—Three transport conveyors at Roth Plating can be seen in this view of racking area, where buffed die castings are racked for plating. Conveyor in center of photo carries racked parts to plating area. At left rear conveyor which brings buffed parts from the buffing department to the racking area can be seen. The conveyor near plant ceiling carries certain chromium plated die castings to spray painting and assembly department.

Fig. 2—Parts racked ready for plating are removed from transport conveyor as they enter one of the three plating areas. They are then placed in the immersion soak cleaner. Operator is removing parts from the soak cleaner and placing them in the mechanically agitated slush cleaner (right center). Parts are then bright copper and nickel plated.



"Reracking is performed only for those parts requiring special racks . . ."

(10-12 oz./gal.). Reverse current, 5-6 volts.

12. Cold water rinse.
13. Dip in 8 to 10 per cent sulfuric acid (by volume).
14. Cold water rinse. For steps 13 and 14, Fiberglass-reinforced plastic tanks are used.
15. Bright nickel plate for 20 minutes to 1½ hours in McGean Bright Nickel solution operated at 130 deg. F. pH 3.0 to 3.5. Cathode rod agitation. Rubber-lined tank, lead heating coils. Current density, 40 a.s.f. Between 0.0004 and 0.001 inch thickness of nickel is deposited in this operation, depending on the thickness specified by the customer (Fig. 3).
16. Cold water rinse.
17. Hang on transport conveyor, to be returned to the racking area and re-racked for chromium plating. Some parts go directly from the bright nickel operation to the chromium plating unit. The department is so laid out that such routing is efficient. Reracking is performed only for those parts requiring special racks, or racks containing auxiliary anodes.
18. Re-rack for chromium plating and hang on transport conveyor to return parts to chromium plating area.
19. Activate in cold solution of sodium cyanide (6 oz./gal.) and soda ash (4 oz./gal.) for

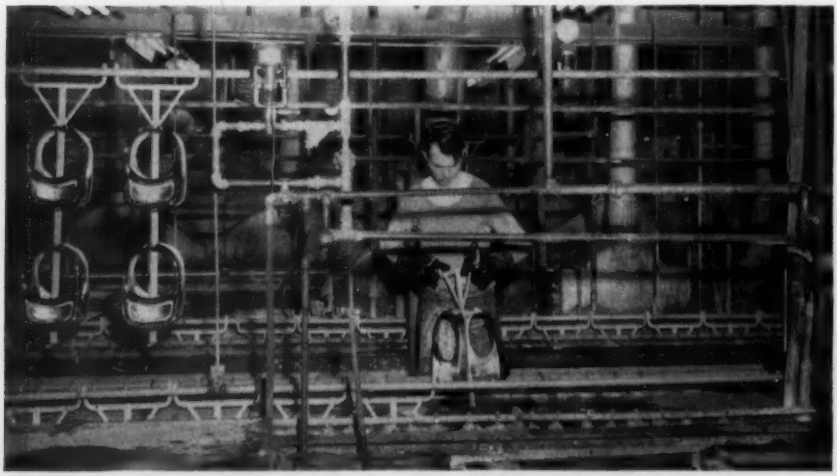


Fig. 3—Bright nickel plated parts are removed from the bright nickel plating solution and sent back to the racking area, or transferred to the chromium plating area. Temperature of the nickel plating solution is controlled by a Powers regulator in left center foreground.

". . . the tank is fitted with bars so that auxiliary anodes on special racks will contact the additional anode rod."

30 seconds to 3 minutes (Fig. 4). Direct current at 5 to 6 volts.

20. Cold water rinse.
21. Chromium plate for 2 to 4 minutes in CR 110 SRHS bath at 105 deg. F. Round lead anodes are used, and the tank is fitted with bars so that auxiliary anodes on special racks will contact the additional anode rod.
22. Cold running water rinse.
23. Cold running water rinse.
24. Cold running water rinse.
25. Unrack and load in basket for hot water rinse, steam radiator dry, and transfer to the final inspection and packing station located immediately adjacent. Some parts are dried in sawdust in rotary dryers and then transferred to inspection and packing.

Empty racks go back on the transport conveyor to return to the racking area.

Certain areas of headlamp rims for one customer must be painted with aluminum paint and assembled so that they are ready for installation on the vehicle. These parts are removed from the plating racks and hung on hangers on another transport conveyor. This conveyor carries them through an additional water spray rinse, past a chrome buffing station (this operation has been found to be unnecessary) and on to another department. Here the paint spraying and assembly work on this part is performed.

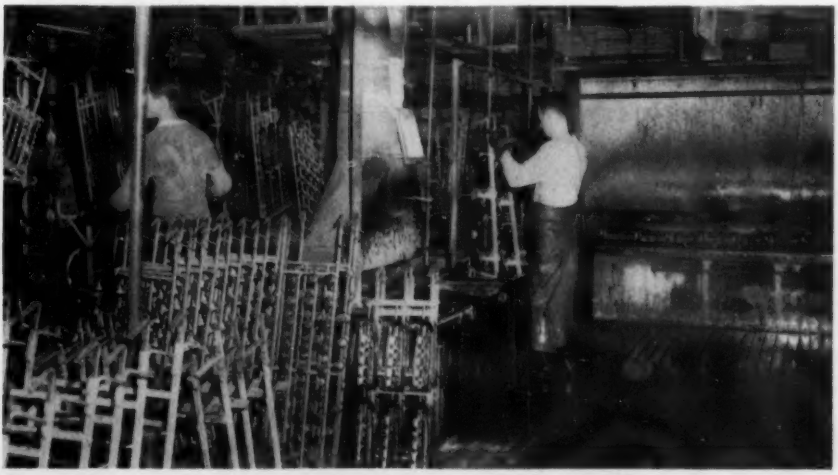


Fig. 4—Prior to chromium plating, racked parts are activated, rinsed in cold water and then placed in the chromium plating tank (right rear of photo). Auxiliary anodes ensure complete coverage of parts with deep recesses and irregularly shaped surfaces.

Fig. 5—The automobile headlight rim manufactured for one customer requires a bright, heat-resisting aluminum paint coating on one area. Conveyor brings the chromium plated rims to this area. Operator places rim in special mask, located in the top of a Conforming Matrix automatic spray decorating machine. Machine sprays the proper area automatically when the top is depressed slightly. Painted rims are hung on rotary rack (rear) to air dry prior to assembly.

The chromium plated rims are unloaded and racked on a large spider rack. The painter removes the rims and sprays the desired area with the aluminum paint, which is heat resistant up to 600 deg. F., in a Conforming Matrix spray-decorating machine. The paint is sprayed by placing the lamp rim in the special spraying mask mounted on the machine and depressing the spraying mount slightly (Fig. 5). The machine functions automatically. Sprayed lamp rims attached to a drying spider dry for two to four hours before being assembled and packed. The assembly area is immediately adjacent to the spraying machine and the drying spider.

Specialized Plating Processes

Racked parts to be finished in either copper, brass, gold, or other special finishes are conveyed to the proper area of the plating department by the same transport conveyor that connects the racking area with the plating area.

Fig. 6—Studebaker nameplates being removed from Sel-Rex Bright Gold plating solution.

"The paint is sprayed by placing the lamp rim in the special spraying mask . . ."

The cleaning and copper plating cycle through which the parts are processed is much the same as that previously described. Copper plated parts are then processed as follows:

1. Nickel plate in an H-VW-M Nickel-Lume bright nickel solution. Air agitation and cathode rod agitation, pH 3.5., ½ per cent carbon nickel anodes —bagged.
2. Cold water rinse.
3. Copper strike for 30 seconds in conventional cyanide copper solution.
4. Bright copper plate for three minutes in Lea-Ronal Copper-Glo.
5. Cold water rinse.
6. Rinse in dilute dichromate solution.
7. Cold water rinse.
8. Sawdust dry.

Nickel plated parts that are to receive a brass finish are processed as follows:

1. Cold water rinse.
2. Brass plate in conventional cyanide brass solution.
3. Cold water rinse.
4. Rinse in dilute sodium dichromate solution.
5. Cold water rinse.
6. Sawdust dry.

Nickel plated parts to be finished in gold may be treated in a sodium cyanide activator or may go directly into the gold strike solution to be processed as follows:

1. Cold water rinse.
2. Gold strike in a white-gold alloy solution for 30 seconds to 1 minute.
3. Reclaim rinse.
4. Reclaim rinse.
5. Gold plate in Sel-Rex Bright Gold solution (Fig. 6).
6. Reclaim rinse.
7. Reclaim rinse.
8. Reclaim rinse.
9. Dip in phosphoric acid (2 pints/100 gal.) pH 2.0.
10. Cold water rinse.
11. Hot water rinse.
12. Cold water rinse.
13. Dip in dilute sodium dichromate (5 lb. sodium dichromate/30 gal.).
14. Cold water rinse.
15. Sawdust dry.

Rack Manufacture and Insulation

Roth Plating Corporation engineers design, manufacture, and insulate the plating racks required for processing the many parts that flow through the shop. The racks are made from copper bars, designed so that each will carry the desired mechanical loads and also have sufficient capacity to carry the required electrical current.

Each rack is processed through cleaning and through the copper strike tank to ensure a clean surface on which to apply the rack insulation. Unichrome vinyl plastisol rack insulation (No. 202) is used. Seven or eight dip coats of this material are applied on each rack. The rack is baked at 180 deg. F. after each coat is applied.

This type of rack insulation was selected by Roth engineers to secure adequate insulation and still hold down the weight of each rack to a minimum.

"Rack weight is limited as much as possible . . ."

Racks are designed with the same idea in mind. Rack weight is limited as much as possible, since the racks are taken through the plating process by hand. Operators can carry several loaded racks with a minimum of fatigue. Heavier racks would not be practical for the scheme of operation of this shop.

Painting and Decorating

The third floor of the Roth plant is devoted to preparation for painting, paint finishing, and baking operations. Die castings to receive paint only are racked and prepared for painting in the following process cycle:

1. Clean in a boiling solution of Northwest 45 (2½ oz./gal.) and Northwest 230 (1 fl. oz./gal.).
2. Cold water rinse.
3. Dip in Parcolene Z.
4. Phosphatize in Bonderite 32 for 1 minute. Temperature, 160 to 165 deg. F.
5. Cold running water rinse.
6. Dip in solution containing chromic acid, 2 oz./100 gal.; phosphoric acid, 2 oz./100 gal.; Parcolene 30, 2 oz./100 gal.; operated at 180 deg. F.
7. Hot air dry.

Phosphatized parts are spray painted as specified and dried on wire mesh belt conveyors that carry them through one of two tunnel ovens fitted with infrared lamps. Oven temperature is usually between 200 to 225 deg. F. Parts are unloaded from the conveyor after it leaves the oven, allowed to cool, inspected and packed for shipment.

Many plated parts require painted decorations. Such parts are spray painted through electroformed spray masks or mechanically formed spray masks so that perfect color definition is obtained (Fig. 7). Other parts receive paint decoration in depressed or embossed areas, or to fill letters or names. Excess paint is then removed, leaving the paint in the depressions formed by the lettering. In each case the painted products are dried in the convey-

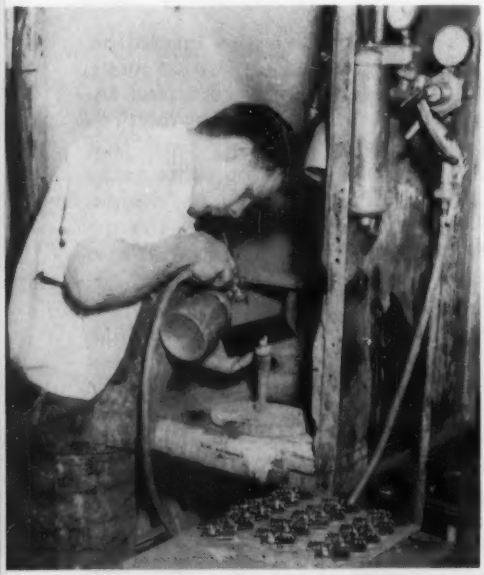


Fig. 7—Using specially made electroformed paint spray masks, an operator spray decorates chromium plated automotive die castings with the specified lacquer or enamel. Parts are then dried in conveyorized tunnel oven. (PRODUCTS FINISHING Staff Photos.)

orized infrared ovens previously described.

Both chemical and electrical controls hold plating solutions and operating conditions within specified limits. Thickness of copper plate is checked at the start of a run of each type of part in order to determine the desired plating time. Nickel thickness is determined by examining random samples, measuring the deposit thickness with an Amineo-Brenner thickness gage.

The practice at Roth Plating is to establish plating conditions that will produce adequate deposit thickness for the service required of the part. The policy is to deposit enough nickel to obtain a high quality plating job, rather than increase the thickness of copper and decrease the thickness of nickel to obtain as thin a deposit as the traffic will bear.

This management policy can only result in satisfied customers and increased business. The ten-year record of growth of Roth Plating Corporation shows that service and quality plating have paid off.

★ ★ ★

Vinyl-Metal Laminate: Better Bonding

Elimination of high temperature deterioration of the adhesives and resultant delamination of the materials used is the result of a vinyl-metal laminate bonding process developed by Arvin Industries, Inc., of Columbus, Indiana.

Drawn parts laminated by the recently developed technique have been subjected to a temperature of 190 deg. F. for four hours without delaminating or showing a measurable weakness of the bond, according to Arvin engineers. Vinyl bonded to metal and then drawn tends to return to its original shape, engineers point out. Under old laminating processes, when the laminate is subjected to heat the adhesive breaks down and the vinyl peels back from the metal, creating a skirt-like or "ballerina" effect along the edge.

"Because of this heat-resistant limitation in the past, many firms have been slow to adapt vinyl-metal laminates to their own uses," according to Robert Nau, director of Arvinyl sales for the firm. "This new development will open many new uses for the material."

The new process and techniques are especially valuable in the production of radio and television cabinets and other items that may be subjected to intense radiant heat, according to Mr. Nau. Many manufacturers also include heat resistance in their specifications because of problems in transporting their products long distances in enclosed vehicles, Mr. Nau asserts.

Using the process, Arvin is manufacturing cabinets, cases, automotive parts, instrument panels and other parts that require deep drawing to get the shape desired.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

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Airless Spray Painting: Machinery Manufacturer Cites Advantages

Reduced overspray makes it possible to paint without spray booth . . .

By C. W. ZOOK
Methods Engineer
Schramm, Inc.
West Chester, Pa.

PAINTING LARGE PIECES OF EQUIPMENT is the problem at Schramm, Inc., manufacturer of portable and stationary air compressors, Rotadrills, and Pneumatractors. Some time ago, this West Chester, Pa., company's methods department group began looking for a painting process that would eliminate the need for the huge spray booths needed in painting such large objects.

The Airless Spray System, a product of Nordson Corp., Amherst, Ohio, was finally selected and installed in the company's new plant about a year ago. The system has worked out satisfactorily, and has given other "bonus" advantages in addition to not requiring a spray booth: low solvent consumption; low exhaust air requirements; produces a high-quality finish; produces little overspray; reduces health and fire hazards.

The finishing process used by this company is simple. All units are washed down with solvent and masked prior to painting. Airless spray is used to apply an alkyd primer and finish coat.

Then the paint is air dried. Twelve small units and two larger units can be finished in a working day. Paint consumption: approximately one gallon per hour.

The alkyd paint used contains 42 per cent aliphatic solvents and 50 per cent aromatic solvents. Viscosity is controlled to 53 seconds at 88 deg. F. By volume, 35 per cent of the paint used is solids.

The airless spray equipment heats the paint to 180 deg. F. and sprays it out under 650 pounds pressure. No compressed air is used for atomization, although it operates the pump in the equipment. Carbide nozzles (No. 09C11) are used on the spray guns. To date, the equipment has performed satisfactorily and has required only cleaning in the way of maintenance.

Photographs on the following pages show how Schramm uses this equipment.

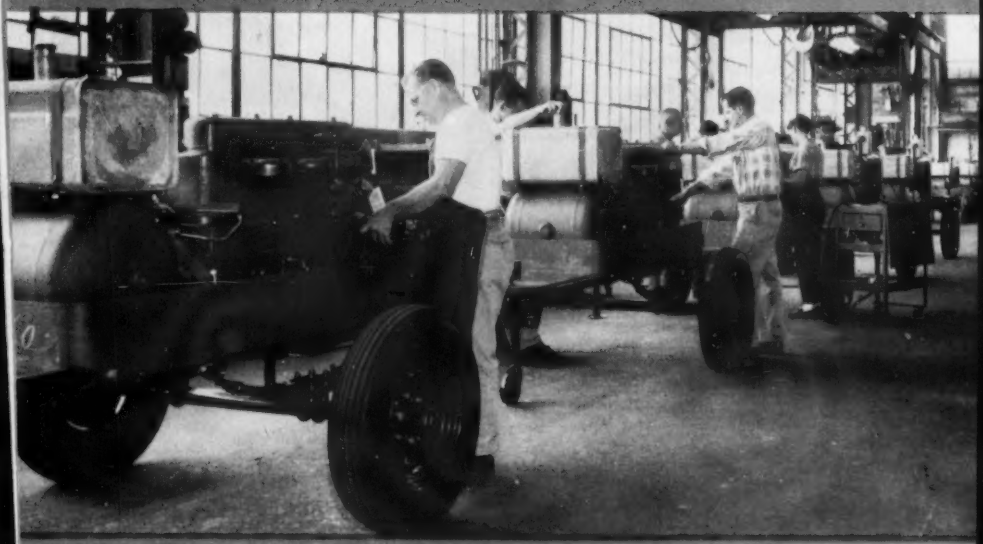

Fig. 1 — Workers attach the final components to brand-new compressors coming off the assembly line. Compressors will now undergo a test run, then will be prepared for painting.

Fig. 2 — Compressors being hooded previous to cleaning and painting.

Fig. 3—The small amount of overspray produced by the airless spray process make it possible to spray in this open area. Plastic draw curtains separate area from the rest of the plant.

Fig. 4—Closeup shows worker spraying a gasoline tank for one of company's compressors. Note the spray pattern. Airless spray unit is shown in left background. It heats the paint to 180 deg. F., puts it under 650 lbs. pressure. Carbide nozzles are used.

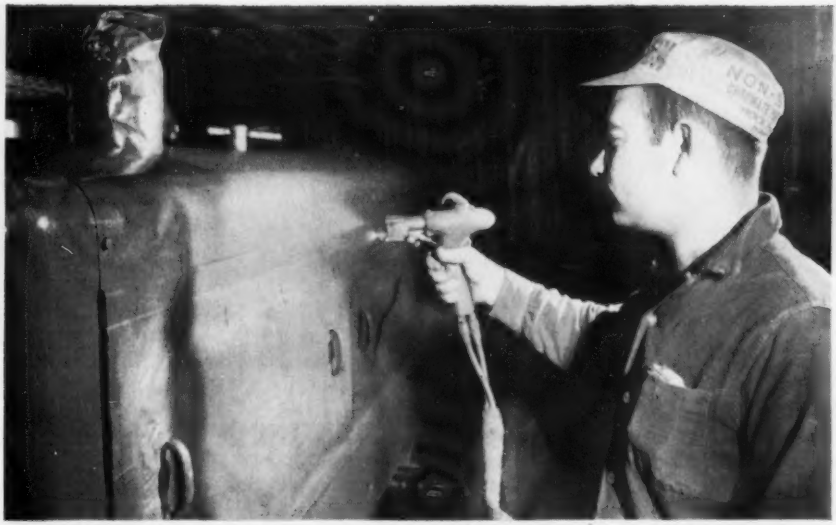

Fig. 5 — A large Schramm air compressor being painted with airless spray. After units have been sprayed, alkyd paint used is allowed to air dry to a hard glossy finish.

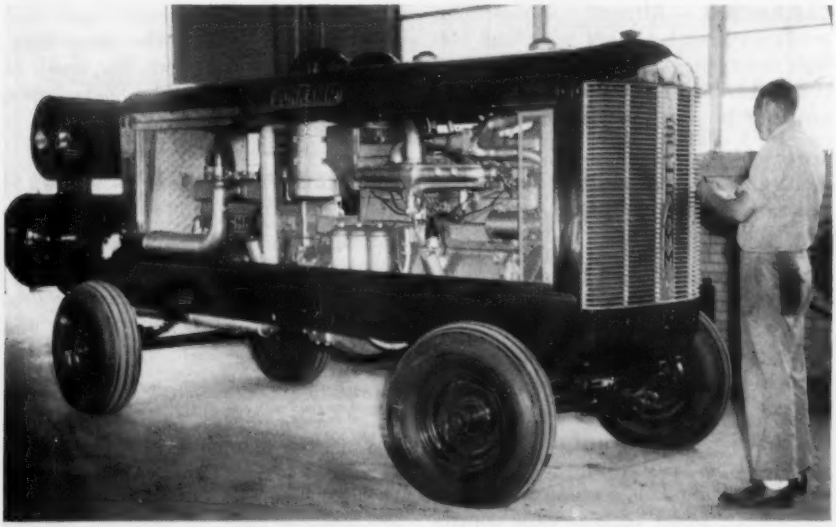

Fig. 6—Alfred Smith, inspector, gives final inspection and approval prior to shipment of one of the largest portable air compressors made by Schramm. (Photographs courtesy Schramm, Incorporated, West Chester, Pa., and Nordson Corporation, Amherst, Ohio.)

Look to Wyandotte for the

ETCHING — Mil-Etch – Etches rapidly at low concentrations; gives uniform, fine-grained etch. No scale or sludge. Long life, simple control, no excessive foam or fumes, nondusty to handle.

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Wyandotte 468 – Neutral, solvent-type cleaner. Miscible with either hydrocarbon solvents or water. Removes oil, buffing compounds, drawing compounds without etching.

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Burnek* 22 – For ball burnishing. Provides real economy for short and medium runs.

DEOXIDIZING — Wyandotte 2487 – Provides excellent preparation for spot welding. Gives uniformly low contact resistance on practically all alloys. No heat or close temperature control necessary. No appreciable surface etching. Work can be stored up to 96 hours before welding. Simple control.

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Phos-It — Excellent for wipe-on, wipe-off cleaning and paint preparation. Gives fine etch or "paint tooth," which results in an excellent paint bond.

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PAINT STRIPPING — P-1075 — Fast-acting, nonflammable, room-temperature liquid paint stripper with a water seal. Removes most paint finishes without attacking aluminum. Economical — gives extra-long service life.

444-C — Removes paint from large parts or objects quickly. A thickened product for brush or flow-on stripping. Penetrates multiple coats of finishing materials with one application; is nonflammable, water rinsable.

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☐ Brightening ☐ Paint Stripping City_____ Zone____ State_____

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Automatic Plating on a Chain Conveyor

Automating an entire plating operation for small television and electronic components with a flexible "powered and free" overhead conveyor . . .

An overhead chain conveyor installed recently at Hightower Plating and Manufacturing Company, Los Angeles, carries electronic components through a complete cleaning, cadmium plating and drying sequence (Fig. 1), without interruption or manual handling.

The heart of this system is a Chainveyor "powered and free" conveyor. It consists of a powered endless chain running through a slotted tubular track, with a duplicate free track paralleling it, in which free trolleys tide. Power is transmitted by pusher dogs on the chain, to the free trolleys, which carry the load.

If it is necessary to have intermediate storage areas or an intermediate stop for machining operations or sub assembly, the free track can be disengaged and allowed to travel free of the powered chain by gravity or by pushing it, manually.

The conveyor installed at Hightower is strictly a powered system, wherein the conveyor is always driven by the chain. The principal advantage of the system in this installation is its ability to negotiate sharp turns, so as to get in and out of dip tanks quickly. This same feature allows conveyor lines to make parallel trips through a processing tank or an oven in a minimum of space. By making several "passes" through a tank or an oven, the parts can remain in the solution or the drying atmosphere for a longer period of time than if only one trip through were made. This saves space, since the tank or oven length can be cut if two passes are possible.

The six-inch-radius idler sprocket assemblies used in this plant make it possible for the conveyor to make sharp turns and for the conveyor lines to parallel one another 12 inches apart. They also make possible quick entry and exit from plating and processing tanks.

For tanks where electrolytic processes take place (electrocleaning and plating), current is carried by bus bars paralleling the conveyor track over the electrolytic processing tanks only. Current is picked up by sliding contact shoes mounted on each load carrier. These shoes are insulated from the chain.

Loads are carried on racks supported by pendants spaced on 6-inch centers, with a capacity of up to 30 pounds per pendant.

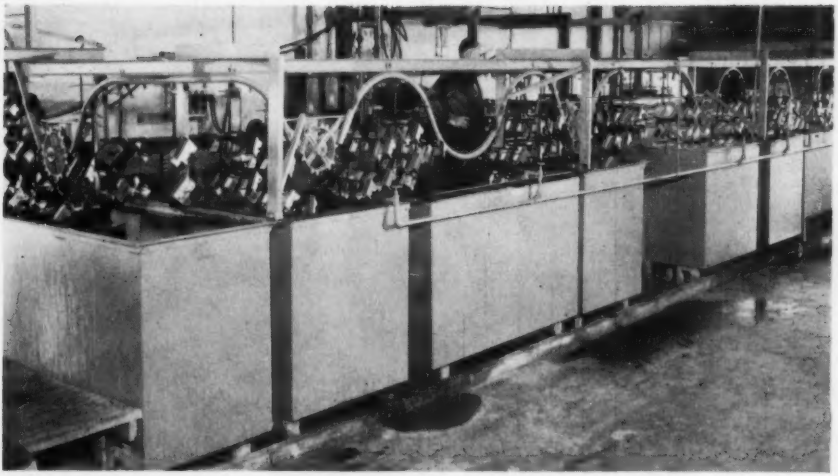


Fig. 1—Chainveyor overhead conveyor takes parts through this line of plating tanks at Hightower Plating and Manufacturing Co., processor of television and electronic components.

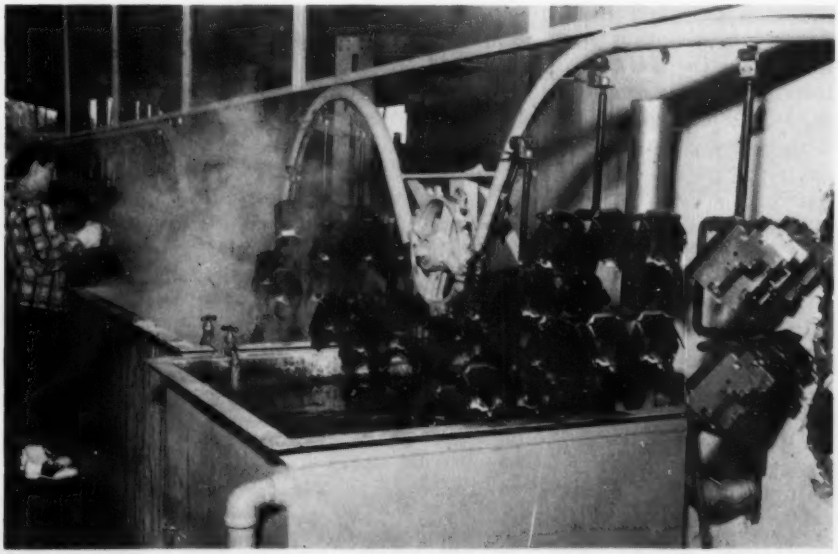


Fig. 2 — Closeup view of conveyor shows how the small radius of the idler sprocket allows parts to get in and out of tanks quickly, negotiate turns in the shortest possible space. (Photographs courtesy Chainveyor Corporation, Los Angeles, California.)

Automatic

Spray Painting at Goodyear

IN RECENT YEARS, companies have been placing growing emphasis on new, more efficient production methods designed to step up volume, cut operation costs, and improve quality control. With ever-increasing competition for a share of today's market, companies can no longer be content with old methods that may still be doing "an average job." The current tightening economy demands modern equipment and techniques to provide profitable output.

As a conseqence, many plants are utilizing new operating procedures to improve overall product quality and step up operating efficiency. It is a movement toward automation by necessity. A good example of this trend, and its ensuing benefits, is found in the installation of automatic spray painting facilities at Goodyear Tire & Rubber Company's plant at St. Mary's, Ohio.

This half-million-square-foot plant manufactures molded and extruded rubber products for a wide range of mechanical and industrial uses. Some items designed for exposed applications are given a protective coat of elastic enamel before shipment.

Hand spraying methods were formerly used to apply this finish coat. However, a Binks automatic spindle-type spray painting machine with complete spraying accessories has been installed as part of the plant's modernization program.

The machine is used to apply a smooth, even enamel coating to molded rubber products. Typical of its functions is the finishing of 8-inch round rubber and steel inserts used to connect automobile heaters with the heater blower.

The inserts are made of steel plate which is cleaned by sandblasting and then coated with a rubber-metal adhesive cement. A rubber strip compound is then molded to the steel plate and held on by the previously applied adhesive.

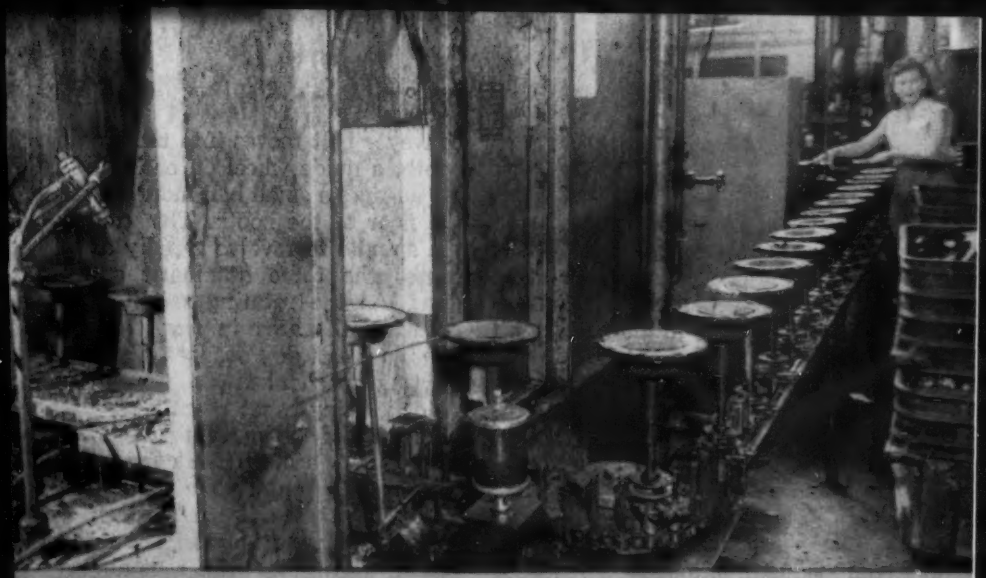
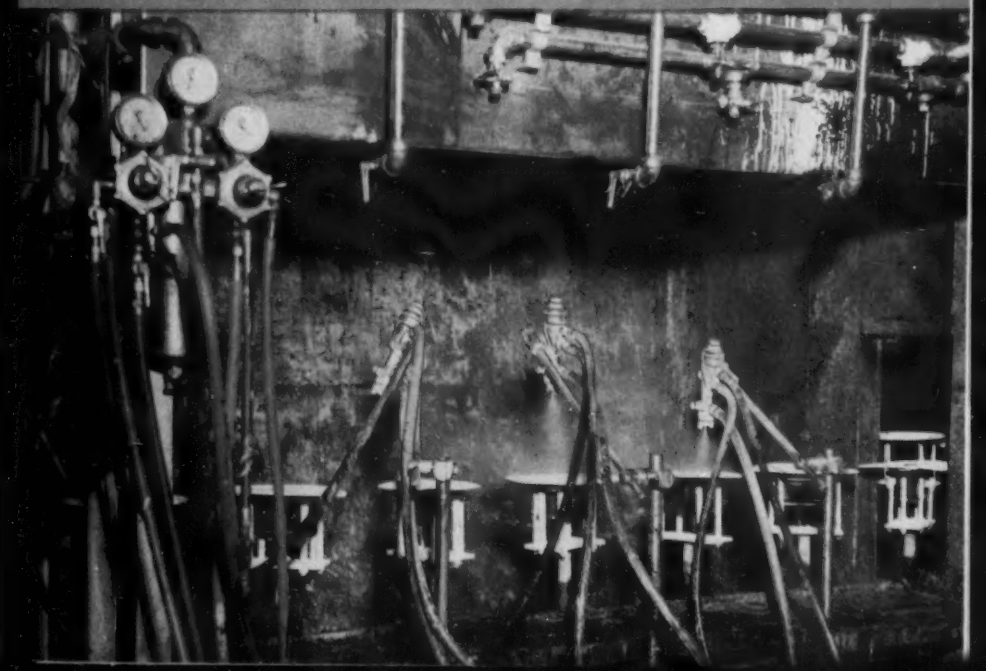


Fig. 1—This automatic spindle-type spray painting machine at the Goodyear plant in St. Mary's, Ohio, has made it possible to spray paint 1500 rubber and steel automobile heater inserts per hour. Operator stationed at the rear of the machine removes each finished insert as the conveyor belt passes, replacing it with an uncoated unit.

Fig. 2—Entering the water-wash spray booth, spindles carrying the inserts begin to rotate as they move past three automatic spray guns. Fluid regulators control fluid pressure to the spray guns, ensuring a constant supply of paint at each automatic spraying station.



The enamel coating rustproofs the steel reinforcing.

The spindle-type spray painting machine utilizes an endless conveyor chain, 2 inches in diameter, with spindles located about 15 inches apart. The conveyor moves on a rectangular track around the outside of a water wash spray booth, entering and leaving the spray area at the front of the booth through small doors in each side.

There are three paint stations equipped with automatic spray guns in each spray area. The guns draw their supply of enamel from two pressure tanks near the booth.

The automatic finishing process begins when the inserts are placed on spindles of the conveyor. As the conveyor belt moves into the spray booth, a guide wheel on each spindle engages a small belt mounted on the floor of the booth. This causes the spindle to revolve rapidly as it passes the three automatic spray guns. As the rotating spindle approaches the area in front of the guns, a small dog engages a spray-starting mechanism on the guns. After passing a set point near the other side of the booth, the dog disengages. This stops the spray and the conveyor carries the rubber inserts out of the booth through a small opening at the side. The three guns are pre-set at different angles to ensure coverage of each type of sprayed piece.

Emerging from the spray area, the spindle-mounted inserts move along the side of the booth, where they pass under a battery of eight

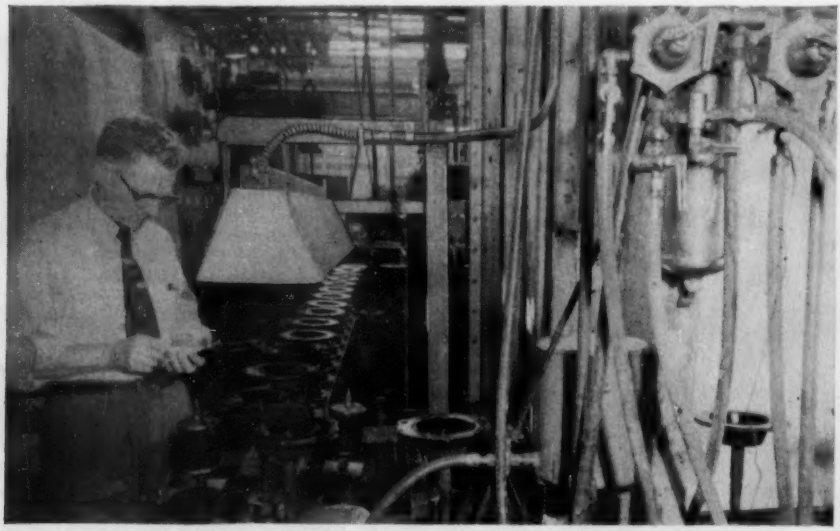


Fig. 3—Sprayed inserts emerging from the spray booths pass under a battery of infra-red lamps, which dry them quickly. This enables conveyor to remain in constant motion.

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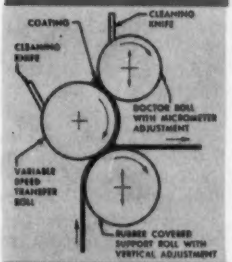
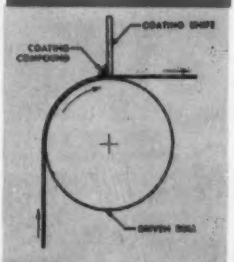
rolling



knife coating



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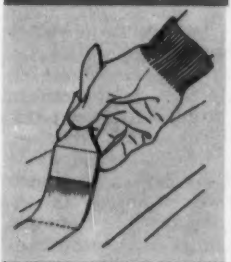

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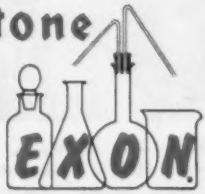

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infra red drying lamps. The heat from these lamps drys the enamel so effectively that the inserts are completely dry when they reach the rear of the booth.

The operator then removes each insert from the spindle and replaces it with an unfinished insert.

After drying and removal from the conveyor belt, the coated inserts are moved in transfer boxes to the final inspection area of the department. Here they are given a non-destructive adhesion test. The inserts are then ready for shipment.

Fig. 4—W. D. Mouse, foreman of the Goodyear plant's Molded Products Div., presents inserts before (right) and after spraying. Made of rubber reinforced with steel plate, the inserts are used to connect automobile heaters with heater blower. (Photos courtesy Binks Manufacturing Co., Chicago, Illinois.)

NEW BOOKS

Electrodeposition of Titanium: Part 3. By W. E. Reid, Jr., J. H. Connor and A. Brenner, National Bureau of Standards for Wright Air Development Center. September, 1956. 18 pages. 50 cents. (Order PB 121721 from OTS, U. S. Department of Commerce, Washington 25, D. C.)

Electrodeposition of titanium from organic solvents was shown in previous research to be most effective from baths consisting of an ether and a soluble reactive titanium compound such as titanium borohydride. This report describes further study of the baths in an effort to increase titanium content of the alloys over the 6.5 per cent previously obtained. The possibility of using sodium or potassium borohydride instead of lithium borohydride to prepare titanium and zirconium borohydrides was examined. Among new compounds prepared for use in the titanium-aluminum alloy bath were chloroborohydride etherates of titanium. Some work was done on the use of organometallic aluminum compounds in a titanium alloy bath. Codeposition of hafnium and thorium with aluminum from the borohydride bath was studied in comparison with the titanium-aluminum alloys. In addition, a number of reactions between reactive organic compounds and titanium salts were performed in a search for a suitable titanium plathing bath.

★ ★ ★

Automation in Practice. By S. E. Rusinoff. Published by the American Technical Society, 848 E. 58th St., Chicago 37, Ill. Price, $6.50.

This book is an integrated survey of the latest techniques of automatic production as they are applied in manufacturing and metal working industries. It begins with a discussion of basic principles—"self-regulation," "negative feedback," the theory of "closed-loop" control systems, and so on, and proceeds to the concrete applications of these principles in industry. Other chapters are devoted to the use of automatic equipment in virtually every area of metal production.

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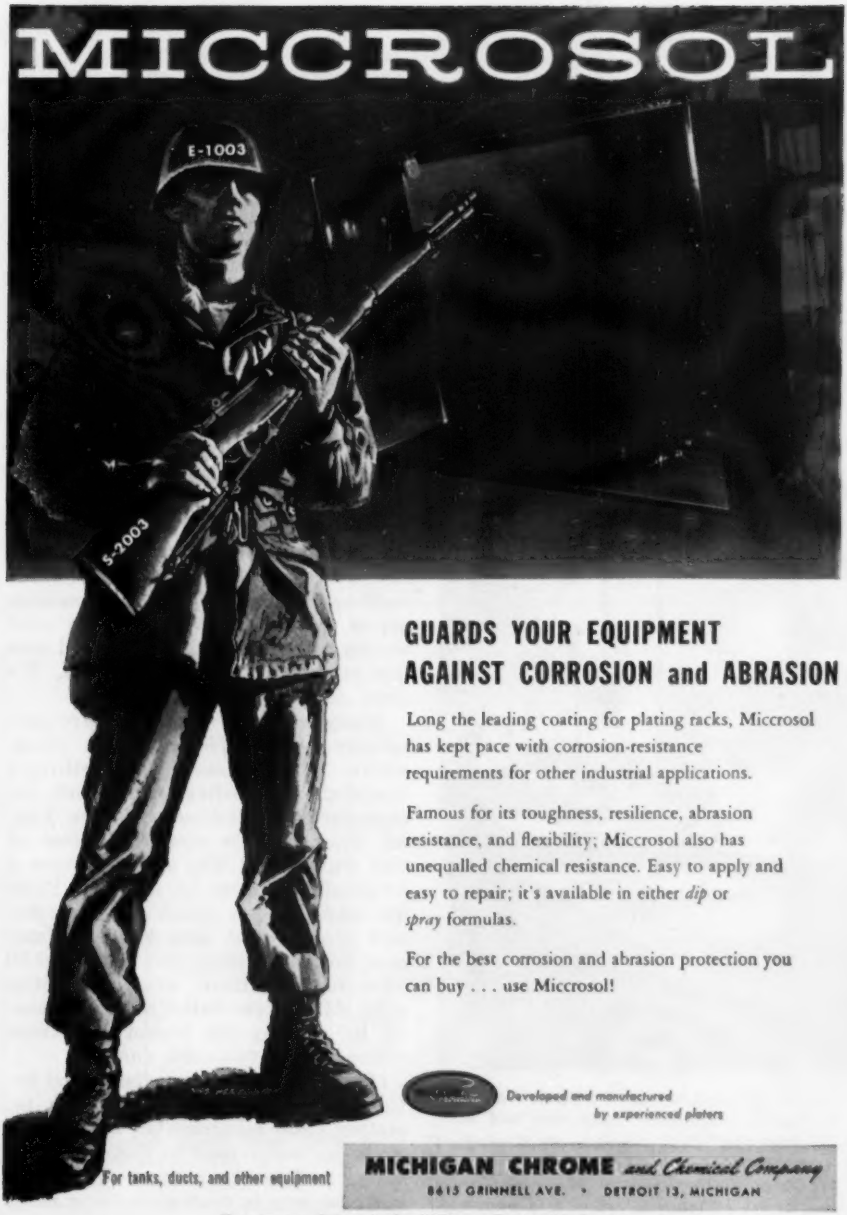

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water and waste:

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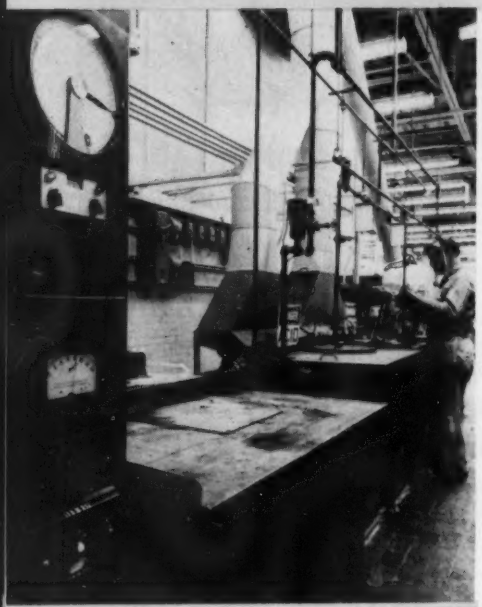

Fig. 1—At Leeds & Northrup North Wales, Pa. plant, conductivity controllers and a pH controller (left) conserve water and neutralize acid wastes in acid bright dips. Worker is dipping parts to be cleaned in one of the company's several acid baths.

At Leeds & Northrup Company's new North Wales Plant, pH control in the acid bright dip installation conserves water and neutralizes acid wastes before they are discharged into the municipal sewerage system. It's done automatically.

Many soldering operations are neceessary at the North Wales plant, where all of Leeds & Northrup's Speedomax recording instruments are manufactured. Before parts are joined, they must be completely free of dirt and oxides. The company uses a bright-dip process to do this. Parts are loaded into a stainless steel basket and dipped, first into a hot sulfuric acid bath and then into a cold 50-50 mixture of sulfuric acid and nitric acid. After these baths, acid is removed by dipping the basket into three water rinses: two cold, one hot.

Two problems had to be solved before the bright-dip process was installed. One: minimize the amount the make-up water used to keep the rinse water sufficiently neutral. The most common way to neutralize water baths

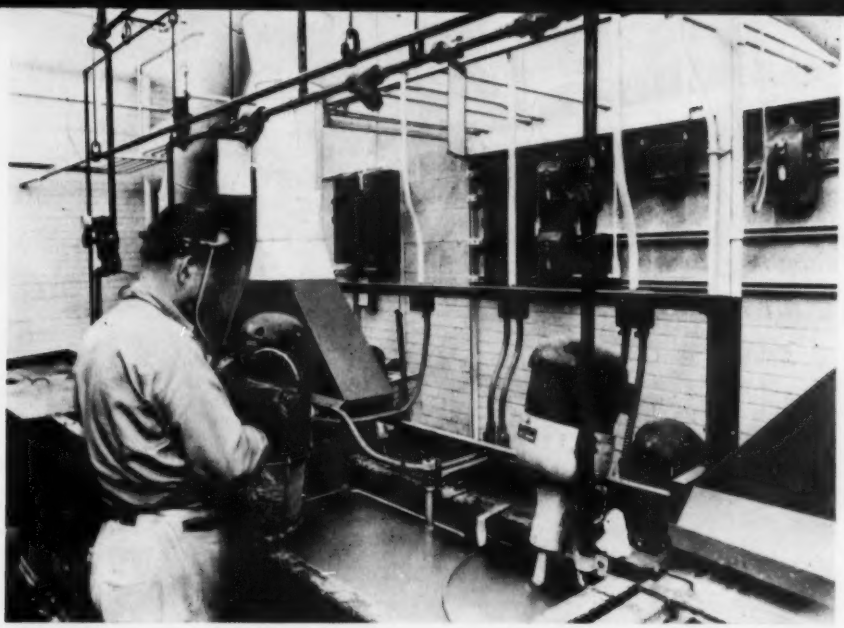

Fig. 2—After repeated rinses, water in rinse tanks (foreground) becomes acid-laden. Conductivity cell (center) sends signal to a controller, which senses acidic condition and opens a solenoid valve (top) to admit enough water to restore neutrality.

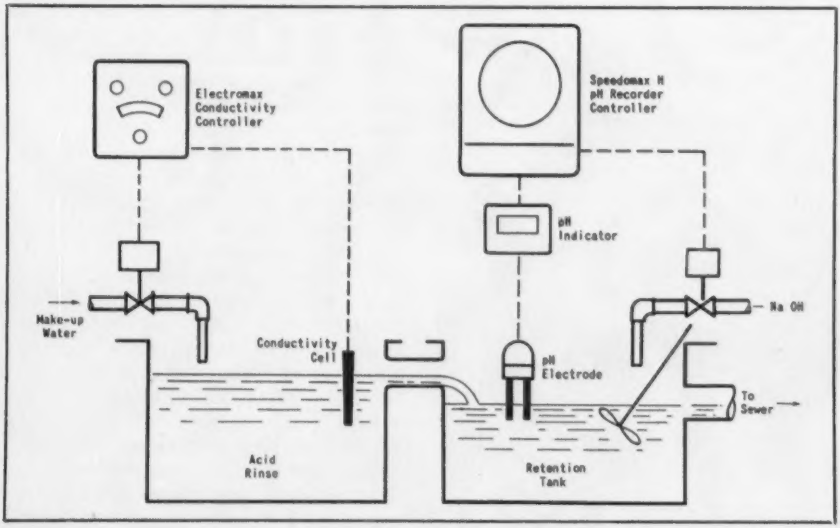

Fig. 3—Diagram shows how conductivity controller and pH controller are connected to measure and control acidity. When acidity of the rinse water becomes excessive, conductivity controller opens valve to add make-up water. Rinse tank then overflows into retention tank, where caustic soda is added to neutralize effluent before it is discharged.

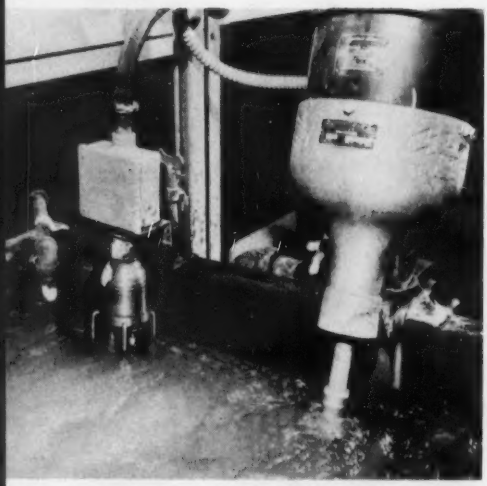

Fig. 4—Stainless steel dip-type pH cell at left senses effluent acidity in the retention tank and sends a proportional signal to the panel-mounted Speedomax recorder-controller. Mixer at right agitates solution so that representative sample is checked by the meter.

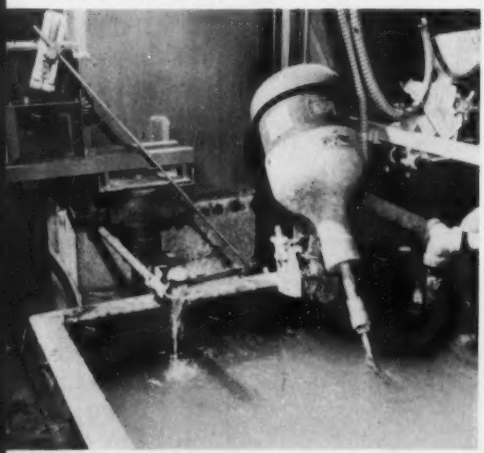

Fig. 5—Caustic soda is added at opposite end of retention tank to neutralize effluent, before discharge. Flow of caustic soda is regulated by valve drive mechanism (top left) in response to signal from recorder-controller. (Photos courtesy Leeds & Northrup Co.)

is to allow a continuous flow of water through the tank. This was not practical at North Wales, since water supply from L&N's own wells is too limited and borough water too expensive to allow such free usage. The second problem was to set up a system to neutralize waste water to a legal pH level before discharging it into the sewerage system.

Both problems were solved by a system designed by Leeds & Northrup's own engineers.

The make-up problem was solved by a system that continuously measures conductivity in each of the cold-rinse tanks. Two controllers are used. When either bath becomes too acid, its controller automatically opens a solenoid valve in the make-up supply line. This adds water and brings the acidity back into allowable limits. By adding water only when needed, instead of continually, this system cuts water consumption to a minimum.

To solve the problem of how to neutralize process effluent, the company's engineers studied allowable pH limits, flows, and tank-capacity requirements.

Based on results of the study, a system was developed that effectively neutralizes process effluent. Before the acid rinse water is discharged into the sewer lines, it flows into a 6 by 3 by 2-foot retention tank installed behind the rinse tanks. Here pH is continuously detected by an L&N dip-type pH electrode assembly, which translates pH into a proportional millivolt output. This electrode output is fed to a pH indicator, which amplifies the voltage and feeds it to a Speedomax Type H recorder-controller. The recorder-controller plots a continuous record of effluent pH. It also feeds a control signal to a valve-drive mechanism, which regulates the addition of caustic soda to the rinse water in the

First of two articles on

Chemical Prepaint Treatments for Metal Surfaces

By J. H. GEYER
Manager, Product Development Dept.,
AMERICAN CHEMICAL PAINT COMPANY

Chemical prepaint treatments are designed to do four jobs well. First, they remove organic soils, shop dirt, scale, and rust or corrosion products from the metal surface. Second, they provide surfaces that are completely compatible with subsequent paint films. Third, they produce a *tooth* that promotes good paint film adhesion. Fourth, they effectively prevent underpaint corrosion growth after any breakthrough in the paint film.

Basically, there are four types of chemical prepaint treatments. These are phosphoric acid, iron phosphate, zinc phosphate, and amorphous phosphate or chromate. Two are discussed briefly in the following paragraphs.

Iron Phosphate

Iron phosphating processes are extensively used in the chemical prepaint treatment of appliances such as water heater shells, ranges, washers, dryers and other *white lines*. These processes will produce excellent paint-bonding films on the metal and retard or prevent underpaint corrosion. Duridine,® ACP's iron phosphating process, is a combination organic soil cleaner and iron phosphate coating material. Both the cleaning and coating operations take place in the same bath. Iron phosphates do not lend themselves to brush-on application, are primarily designed for spray type equipment of four or five stages. However, several dip installations are operating today by inclusion of an alkali precleaning stage.

Zinc Phosphate

ACP Granodine® is an example of this type of chemical prepaint treatment process, the type now being used to treat steel in the automotive industry, and predominantly specified for steel ordnance and military items. This process forms a coating which offers the ultimate in paint adhesion promotion and vastly augments the corrosion resistance of subsequent paint films. Zinc phosphate materials are extremely flexible as to method of application—can be applied by brush, dip or automatic spray equipment. In a typical dip or power spray system, the stages would be alkali clean, water rinse, zinc phosphate treatment, water rinse, and acidulated final rinse. With considerable areas of rust or scale, an acid pickle should follow the alkali cleaning stage.

On zinc surfaces, the zinc phosphates perform a rather unique function. They act as a barrier against chemical reaction between the applied paint film and the zinc surface, preventing blistering and early breakdown of the film.

Two of the four major chemical prepaint treatments for metals have been covered briefly in this article. More complete information can be had by contacting an ACP sales representative or by writing us at Ambler, Pa.

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retention tank. Mixers agitate the solution so that the caustic soda is evenly distributed in the tank. The system brings the pH of the final effluent to a legal level of 7.5.

This control system not only holds the pH of the effluent within required limits, but also plots a graphic record of its performance—providing permanent proof of conformance with legal standards of the area.

★ ★ ★

Addition Agents: What Will They Do?

An addition agent can help out a lot in producing a brighter finish, a matte finish, a finer grain structure, or better corrosion resistance. But it won't correct difficulties resulting from a bath that is out of balance to begin with, according to a report recently released by engineers at Wagner Brothers, Inc., Detroit, Mich.

The improved results obtained by using addition agents are obtained because these additives change the bath's throwing power or possibly its polarization characteristics.

To use one of these additives to restore the normal balance in a plating bath, however, is about as useful as dropping pennies in a wishing well, the report states.

According to Wagner engineers, the only way to keep a bath in balance is to make periodic additions of cyanide and caustic soda. This should be done regularly—daily or twice a week, depending upon the amount of production—if you want to keep out of trouble.

To get full benefit from an addition agent, it is a good idea to check the bath before the additive is dropped in, to make sure it is in balance, even if a regular maintenance schedule is followed.

There are several other factors to be considered when using addition agents. Since the addition agents are effective only so long as their concentration is kept up in the bath, chemical stability and temperature stability of the agents themselves are important. The addition agent should not break down during electrolysis or during idle periods, if it is to remain effective. Likewise it should not break down rapidly at temperatures higher than the optimum operating range of the bath.

Solubility must also be taken into account. If the addition agent is not soluble, it will drag out on the plating barrel or float on top of the plating solution.

A good addition agent (for zinc and cadmium plating) should render the deposit bright without sacrificing ductility; be stable in the electrolyte; maintain its effectiveness over a wide range of operating conditions; be removed from the electrolyte by chemical treatment; help you to operate efficiently as well as economically.

★ ★ ★

SOUND FILMS. A booklet titled "Westinghouse Sound Films" lists 47 general interest films, product information films, and training films available without charge from Westinghouse. The 16 mm sound films are for use by church, social, professional, civic, and business groups. For a copy of booklet B-7077, write **Westinghouse Electric Corporation**, P. O. Box 2099, Pittsburgh 30, Pa.

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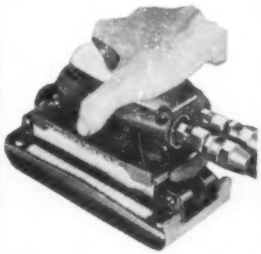
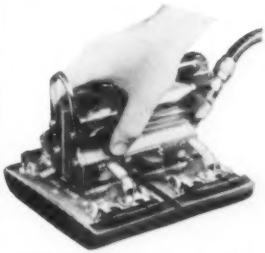


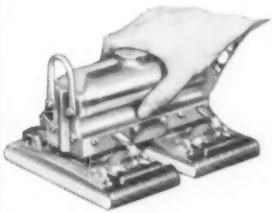
OS-700—single-pad orbital sander, weighing 5 lb, operates over 6000 cycles per minute.



1000—straight-line sander with big abrasive area, operates at 2500 oscillations per minute, palm lever control, 7½ lb.

SP-101—straight-line, single-pad sander, 3000 oscillations per minute, 5 lb.

600—heavy-duty, straight-line unit for sanding, pumice rubbing, or polishing, 1100 oscillations per minute.



4000—straight-line, two-pad sander with longer, slower stroke; 2100 oscillations per minute, 9 lb.

SUNDSTRAND MAGNETIC-PNEUMATIC PRODUCTS

Division of Sundstrand Machine Tool Co. • 1020 Ninth Street, Rockford, Illinois

SUNDSTRAND

A name to remember in **AIR SANDERS**

For more data circle 338 on Postpaid Card

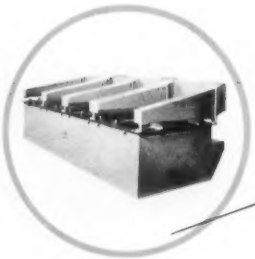
ECONOMY—EFFICIENCY—YOU GET ALL THREE FROM

MOTORIZED TANK (KOROSEAL LINED)

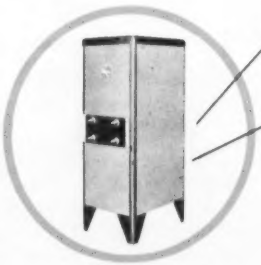
MOTORIZED TANK (NOT LINED)

Here is a typical alkaline or acid barrel plating plant layout designed by the UDYLITE Engineering Department for fast, efficient metal finishing. This system, with the proper UDYLITE equipment placed in a practical flow chart pattern, comprises the ultimate in modern plating production.

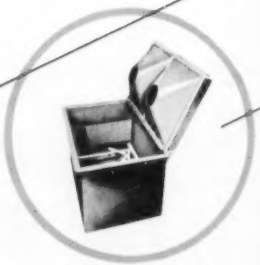
Naturally, different plant limitations and end-products require individually planned layouts. For this reason, the UDYLITE Engineering staff and their knowledge are available to you for your particular shop needs. If a modern, money-saving plating plant is your goal...why not let UDYLITE help you plan it!



4 BARREL PLATE UNIT



1500 AMP SELENIUM RECTIFIER



HOPPER TYPE RINSE

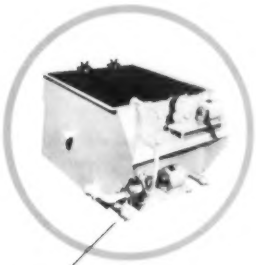
the udylite corporation

detroit 11, michigan

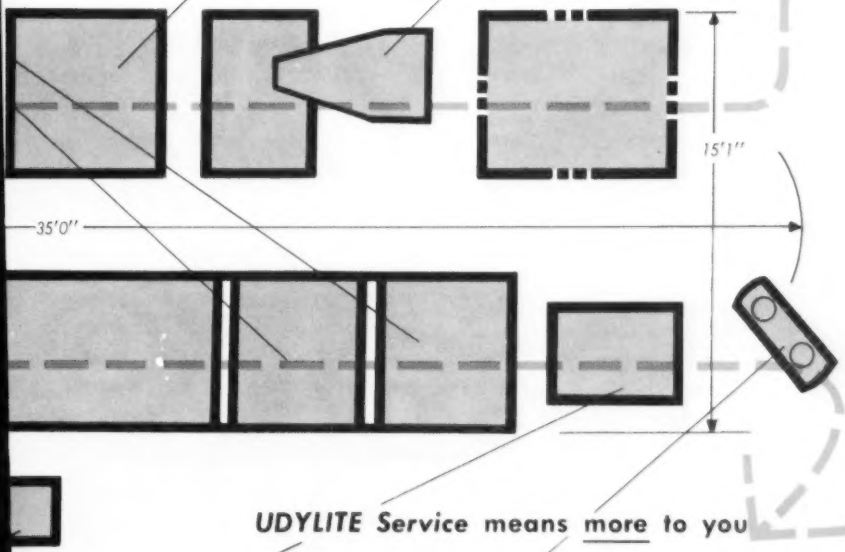
world's largest plating supplier

HIGH PRODUCTION
UDYLITE PLANNED LAYOUTS

MOTORIZED CLEANING TANK



LOADING STAND



CENTRIFUGAL DRYER

***UDYLITE* Service means more to you**

No matter what your problem, from the designing and equipping of a complete plating plant, to the *right* answer on a plating process or choice of supplies, UDYLITE is at your service! The UDYLITE Customer Service Laboratories are ready to analyze and report on your plated samples and solutions at any time. The UDYLITE Engineering Department is ready to advise and assist you with everything from suggestions to specific planning.

If you're not taking advantage of UDYLITE's many diversified services, you'd better contact your local UDYLITE representative today! For progress in plating . . . with economical equipment, processes, and technical assistance . . . UDYLITE leads the way!

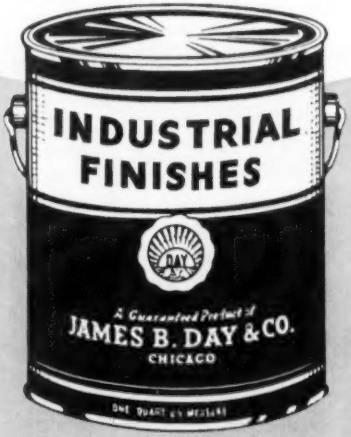
PERFORMANCE TESTED!

for Enduring Beauty

Dayco industrial finishes

For more than half a century, we have been serving the leaders in a wide variety of industrial fields, with the fine finishes that save time and money on production and add the attractive appearance that sells. We have or will produce for you, the special finishes economical production and enduring beauty calls for. We are specialists in:

- Clear and colored Lacquers
- Primers
- Surfacers
- Baking Enamels
- Screening Materials (Lacquers-vinyls-synthetics)
- Handle Finishes
- Removers
- Undercoaters
- Stains



FINE FINISHES SINCE 1906

Write us about your needs

JAMES B. DAY & COMPANY

1872 Clybourn Avenue · Chicago 14, Illinois

Letters from Overseas Readers

Sunny View
24 Bosworth Rd.
New Barnet
Herts, England

Dear Sir:

I feel I must write and tell you how much I enjoyed reading your editorial in the August issue of PRODUCTS FINISHING, entitled "Needed: Courage and Hard Work."

I have spent more than 35 years in the finishing industry, during which time I have worked on aircraft, radio, telephone, street cars, office and hospital equipment, as well as motor cars.

Your comments are practical and encouraging. I have seen the small enterprising business grow and develop purely because of enthusiasm and hard work. In 1931, when England went off the gold standard, two young but energetic London business fellows began a typewriter rebuilding service. In spite of opposition and real difficulty, they went onward and forward. I had the privilege of working for them.

Thousands of typewriters were stripped down and reconditioned as new. Old, worn parts were replaced by new. Bases were re-enamelled and other parts plated.

Today, these two men are still in London, and the City and West End Typewriter Company is known throughout the metropolis.

How true what you say! "The strength and vitality of our country and our industrial society is only as great as individual initiative."

Today, I can see what a long way we have come. But there are still many opportunities. I only hope that thousands will read, mark and learn what you have put into words.

All good wishes to PRODUCTS FINISHING. It deals with the practical and the "know how." After all, this is what the readers want. We receive your journal at the Standard Telephone & Cable Company. That is where I am now. It circulates in our Finishing Department, and as a methods man I

For more data on advertisement on opposite page, circle 340 on Postpaid Card

enjoy it. Thank you for sending your excellent finishing journal.

Yours truly,

Mark Reeves

★ ★ ★

Dear Mr. Blount,

I am very pleased to say that the plating industry in Japan is steadily gaining in the use of automatic equipment. We have recently received several orders from some television makers and general plating firms in Tokyo and neighboring cities for full-automatic and semi-automatic plating machines. Also, the use of Nickel-lume and other brighteners is becoming increasingly popular in order to save labor and to facilitate the work.

S. Murata

While some of our platers are so highly enterprising and progressive, the others are still sticking to the old slow hand work.

We know that there is much yet to learn from America in the matter of plating, as in other things. We rely upon your further guidance and assistance.

Sincerely yours,

S. Murata

Murata Industrial Co., Ltd.
Kobe, Japan

★ ★ ★

Electroforming of Waveguide Components for the Millimeter-Wavelength Range. By Albert A. Feldmann. National Bureau of Standards Circular 587. 1957, 16 pages. Price, 15 cents. (Order from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.)

In the millimeter-wavelength range, electroforming represents almost the sole method of construction for precision waveguide components, due to the mechanical tolerances required.

This publication outlines the procedures and the materials necessary for the production of high-quality millimeter components with a minimum of equipment, time or specialized knowledge of electrodeposition. This can be done with machine-shop facilities, normal laboratory facilities, and a few auxiliary items.

This circular includes sections on: metals to be deposited, the required equipment, the mandrel, cleaning process, masking of mandrels, and electrodeposition. A list of helpful literature and the title of a book containing sources of supply are appended.

Bata cuts mold cleaning time in half with Pangborn Hydro-Finish

Bata Shoe Co., Belcamp, Md., used to clean shoe molds by pickling. For a better cleaning job, Bata replaced this process a year ago with Pangborn Hydro-Finish. Today this machine gives Bata top quality cleaning, does the job *in half the time* required by pickling and has required "no maintenance whatsoever." Also, acid disposal problems have been eliminated.

Says Mr. Albert Kotras, Research, "We thought it was sales talk but the Hydro-Finish has lived up to every claim the Pangborn representative made." Convinced by the performance of its Hydro-Finish machine, Bata management now plans to order a second one.

Today, through new design and use of air jet sluriators, Pangborn Hydro-Finish costs less originally, costs less to maintain and gives you easier handling and added efficiency. Write for Bulletin 1403 to PANGBORN CORP., 5000 Pangborn Blvd., Hagerstown, Md. *Manufacturers of Blast Cleaning and Dust Control Equipment.*

• • •

USE PANGBORN HYDRO-FINISH FOR:

Deburring • Surface finishing • Finishing threaded Sections • Improving cutting tool life • Maintaining dies and molds • Removing grinding lines • Removing heat treat scale • Preparing Surfaces for coatings, platings, etc.

Pangborn

BLAST CLEANS CHEAPER

For more data circle 341 on Postpaid Card

finishing clinic

Suggested solutions to problems submitted by readers. Send your problem to our Editorial Staff. There is no charge.

"Spotting-Out" of Solid Brass and Silver Plate

Question: *We have great difficulties with the "spotting-out" of solid brass and silver plate. Has anything been offered by the trade recently to help this condition?*

O. F. D.

Answer: With this letter we are forwarding information on some materials which are currently being used to help solve this problem.

Companies which supply materials which may be helpful are listed on Page 166 of the PRODUCTS FINISHING DIRECTORY under the heading "Rinse Aids."

★ ★ ★

Tinted Air-Dry Enamel or Lacquer

Question: *Will you please give us the names of companies that manufacture fast-dry enamel or lacquer in brass or gold shades?*

M. S.

Answer: On Pages 99, 100, 102 and 105 of the PRODUCTS FINISHING DIRECTORY, you will find listed quite a number of companies who manufacture lacquers. Most of these companies can supply the tinted lacquers in which you are interested.

Cleaning Embossed Surfaces Following Spray Painting

Question: *We have read in your December issue an article concerning cleaning embossed surfaces following spray painting and automatically wiping the surfaces of dials and knobs.*

We would appreciate it if you would forward the names of the companies who manufacture this type of equipment.

T. F. B.

Answer: We are referring you to companies from whom you will be able to secure information.

★ ★ ★

Silver Spray Solutions Used in Electrotyping

Question: *We have a two-jet sprayer. A silver solution is used in one jet and a solution of ammonium nitrate or ammonium chloride is used in the other. These two solutions are sprayed individually so that they strike together at the surface to produce a silver plate. They are used on printed circuits. Can you give me the formula so we can make up these solutions and get the right amount of each chemical in the two solutions?*

W. C.

Answer: We are recommending sources from which the desired information may be obtained.

Exhaust Equipment for Polishing Room

Question: *We have a polishing room with two lathes for silver, brass, and so on.*

We are installing exhaust equipment and would like to know who could give us information on capacity, ducting, and related subjects.

J. C. M.

Answer: We are referring you to companies who can supply you with information and exhaust equipment.

Also, you may be interested in seeing the enclosed tearsheets of the article "The Significance of Air Velocity in Ventilation Design." This article appeared in the June, 1953, issue of PRODUCTS FINISHING.

★ ★ ★

Hot Dip Paint Process

Question: *In the August, 1957, issue of PRODUCTS FINISHING in the "Finishing Clinic" section you refer to a Hot Dip Paint Process. Will you please advise where additional information on this subject can be secured.*

R. W. L.

Answer: We are referring you to a company from whom you will be able to secure the information you desire.

★ ★ ★

Black Oxide Finishes on Cast Iron Surfaces

Question: *We are having a problem with black oxide finishes adhering to cast iron surfaces, such as Meehanite. The oxide will rise to the surfaces of the parts and come off when they are handled.*

We would appreciate any information as to the preparation of the metal before finishing or suggestions concerning this application.

F. H. P.

Answer: We are referring you to companies who supply proprietary materials for black oxide finishes and certainly they would be able to offer helpful suggestions on the satisfactory solution of your problem.

Companies who supply these materials are listed on Page 36 of the PRODUCTS FINISHING DIRECTORY, a copy of which we are enclosing with this letter.

★ ★ ★

Dull Black Baking Enamel

Question: *We are interested in finding a supplier of a dull black baking enamel, suitable for dipping and then baking at 675 deg. F.*

C. G. R.

Answer: We are referring you to companies from whom you may be able to secure the type of baking enamel you require.

★ ★ ★

Stripping Lithographed Sheets

Question: *We are interested in continuous stripping of lithographed waste sheets. These sheets have many coatings of inks, paint, varnishes, etc., all of which have been baked.*

Any information you could send us would be appreciated.

S. A.

Answer: We are referring you to manufacturers of stripping materials. They will be able to provide the information you desire.

★ ★ ★

Stripping Brass and Nickel from Aluminum

Question: *We would like to secure information on how to strip brass and nickel from aluminum.*

We are having some difficulty with this process and any information you can give us will be appreciated.

Z. W.

Answer: We are recommending several companies who can supply the information you desire.

Infrared Heaters Keep Workers Warm

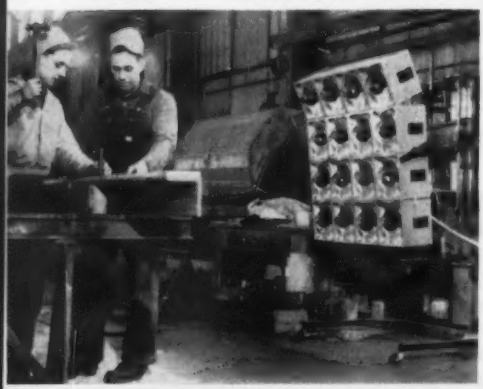
Many companies with areas too large to heat with a central heating system are finding the solution in infrared lamp sections. These portable units warm the workers by directing radiant energy at the work station. The infrared beams heat only the solid objects they fall upon, not the surrounding air. Thus small groups of personnel can be comfortable under the exposure of infrared lamps—without the expense of heating large, open spaces.

Small infrared heaters, such as those made by The Fostoria Pressed Steel Corporation, Fostoria, Ohio, are highly flexible. They can accommodate any number of infrared lamps and can be moved from place to place without complicated installation.

These infrared heaters are economical to operate. They heat up instantly, so that there is no period of inactivity while the workers wait for the units to warm the area. When employees leave the station for lunch or a break, the equipment can be turned off. It heats again in seconds when they return.

There is no problem of glare with a properly designed infrared heater. The bulbs are a deep red color, and transmit heat with a low level of light.

Infrared heaters serve a dual purpose in work areas where supplementary light is needed. White incandescent bulbs can be installed in some of the sockets of the section, providing comfortable heat and safe illumination at the same time.



Infrared heating units being used to keep workers warm in Paxton and Wierling Iron Works, Omaha, Nebraska. (Photo courtesy Fostoria Pressed Steel Corp., Fostoria, Ohio.)

★ ★ ★

Problem: Product Identification

A manufacturer of automotive parts is producing nickel plated contact bracket assemblies bearing different customer identification numbers stamped into the steel, although all parts are alike. It is desirable to be able to identify the entire part visually by its color rather than to be forced to read the small identification number.

The product in question is a formed piece of steel, approximately two inches long with a tungsten disc brazed to one end. Although the parts come from the same die, each customer desires that his own name be stamped on his part. When parts are mixed during plating, and parts bearing one customer's name are shipped to another customer, an

unfortunate situation is created and time and money are lost in reshipping parts to the proper location.

The contact bracket assembly must be plated so that it will stand a 15-hour salt spray test without corroding. It must be free from oil to avoid electrical contamination. The present procedure is that the steel part is nickel plated and then the tungsten disc is brazed to one end of the nickel plated contact bracket.

The manufacturer of the contact bracket assembly suggests that the solution to this problem may be one of the following:

1. Find a material which does not look anything like nickel, which will provide 15-hours' salt spray protection and which will stand brazing furnace temperature (approximately 2,000 deg. F.) without blistering or discoloration.
2. Find a method of coloring the nickel, either before or after brazing.
3. Find a material which can be plated to the assembly after brazing on the disc, but which will not coat the tungsten, or injure it.
4. Find a material which looks like nickel, but which can be colored, that will stand brazing temperatures and which will provide 15 hours' corrosion protection.

The contact bracket assembly must be produced as inexpensively as possible.

One suggested solution is that, after the parts leave the brazing furnace they be processed through an atmosphere which will color the nickel plate uniformly without injuring the product in any way. Parts for one manufacturer could be processed through this step and colored; parts for another manufacturer could be left in their original nickel color and the problem of color identification would be solved. The parts are being produced, principally, for two different manufacturers and therefore only two different colors are required.

Readers who have suggestions for a solution to this problem should write to PRODUCTS FINISHING, 431 Main Street, Cincinnati 2, Ohio, so that they may be referred directly to the manufacturer in question.

★ ★ ★

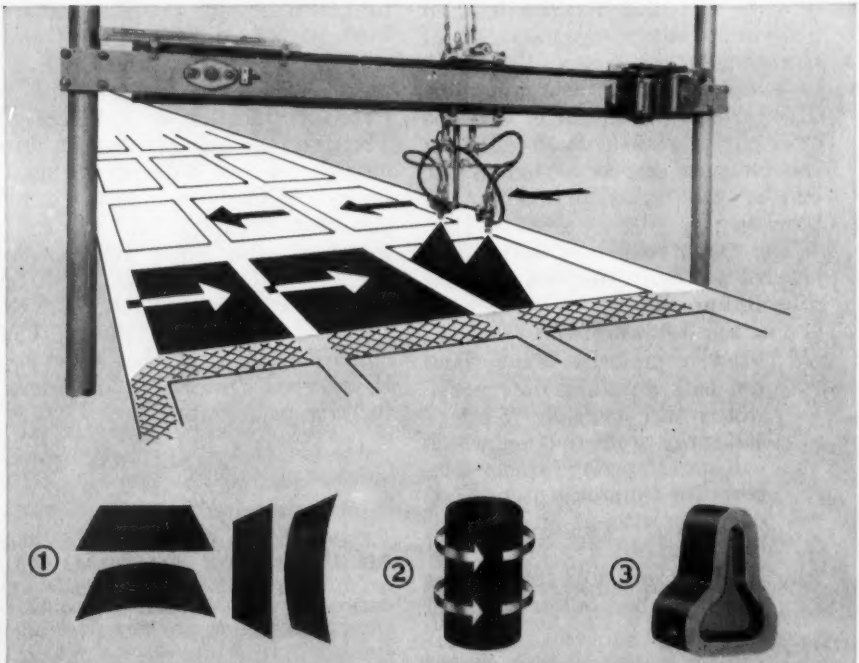
CATALYTIC OXIDATION FOR AIR-POLLUTION CONTROL. Successful applications of catalytic oxidation to four difficult air-pollution control problems are reviewed in a technical reprint available from **Oxy-Catalyst, Inc.**, Wayne, Pa.

The paper describes installations where hard-to-oxidize components are encountered.

Titled *Versatility of Oxidation Catalysts for Industrial Air Pollution Control,* the six-page paper by J. H. Houdry and C. T. Hayes of Oxy-Catalyst, Inc., was presented before the Golden Jubilee Meeting of the Air Pollution Control Association, in St. Louis, Mo.

Catalytic oxidation—the burning of fumes and waste gases at relatively low temperatures, by catalytic action, is most effective on purely gaseous and vaporous effluent. The paper points out that successful systems can be designed even where abrasive dusts, large particles and inorganic materials which tend to poison the catalyst are present.

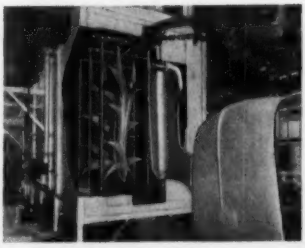
DeVilbiss Automatics...a cost-



DeVilbiss Automatic Spray Machines, in three basic types, feature speed of application and uniformity of finish not possible by any other coating method.
(1) Automatic Transverse Machines coat flat or contoured shapes. (2) Automatic Rotary Machines spray all types of small shapes. (3) Automatic Chain-On-Edge Machines spray all types of irregular shapes inside and out.

← *DeVilbiss Spray Guns.* Complete range of models for maximum efficiency for all production requirements. Send for Catalog IE-E.

→ *Newcomb-Detroit Flo-Coaters.* Save manpower, floor space. Generally used for prime- or single-coat applications. Write, stating requirements.



saving answer to coating problems

You can increase rate of production, improve quality of your work, and reduce costs to fraction of manual methods!

Complete mechanization with DeVilbiss Automatics eliminates variation of manual operation and boosts production—in many cases 500% or more.

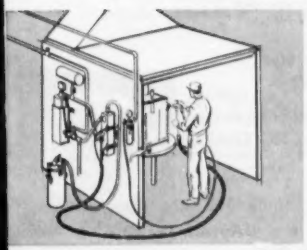
Gun positions are precisely set to coat your product quickly, uniformly, with accurate lapping and minimum overspray.

This precision means greater uniformity of spray-applied film; assured uniformity of color, luster, and texture of finish. Use of materials is carefully established and maintained; rate of production is constant.

What's more, you can know in advance whether automatic painting with DeVilbiss is practical. We will test-run your product in the DeVilbiss Laboratory without any charge or obligation. Call our nearest branch office; or write us direct for Series I-8000 Bulletins on automatic spraying.

THE DEVILBISS COMPANY, Toledo 1, Ohio • Barrie, Ontario • London, England • Branch Offices in Principal Cities

DEVILBISS **NEWCOMB-DETROIT**



DeVilbiss Hot Spray. Provides heavier film build, with faster drying, less overspray, fewer rejects. Send for Bulletins IE-114B and F-286.

DeVilbiss Fluid Hose. Unsurpassed for resistance to solvents, oils. Flexible, kink-proof. Full line of connections. Send for Catalog IE-E.

For more data circle 342 on Postpaid Card

IMPROVE FLOW-COATING WITH BENDIX ULTRA-VISCOSON

Keep paint at the right viscosity for flow-coating appliances, automotive parts or countless other products with Bendix Ultra-Viscoson*. This electronic viscometer automatically controls the addition of solvent to the supply tank as well as indicates and records continuous viscosity readings. Operates on any type of flow-coating equipment. *REG. U.S. PAT. OFF.

- Eliminates "ORANGE PEEL" appearance due to high paint viscosity.
- Eliminates STREAKS due to low paint viscosity.
- Minimizes REWORK, resulting in COST REDUCTION.
- Improves UNIFORMITY and QUALITY.
- Proportions of PAINT and SOLVENT held to close tolerance.

Cincinnati Division, Dept. 390, 3130 Wasson Road, Cincinnati 8, Ohio.
Export Sales: Bendix International Div., 205 E. 42nd St., New York 17, N.Y.
Canada: Computing Devices of Canada, Ltd., Box 508, Ottawa 4, Ontario.

Cincinnati Division

Bendix AVIATION CORPORATION

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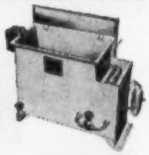
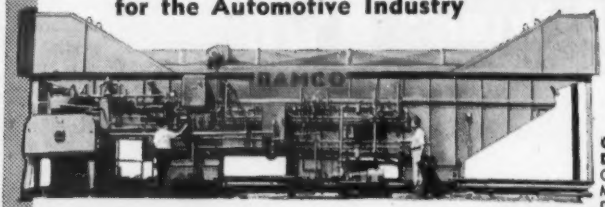
RAMCO degreasers

ANOTHER RAMCO PRODUCT

from Laboratory Units to Giants for the Automotive Industry



LABORATORY DEGREASER



GIANT FORD DEGREASER
Courtesy Ford Motor Car Co., Detroit

Call on our engineering department for the latest in ULTRA-SONIC CLEANING.

Send for FREE CATALOG. Call your nearest Ramco engineer and have your metal cleaning equipment SERVICED AT NO CHARGE.

RAMCO EQUIPMENT CORP. Div. of Randall Mfg. Co., Inc.
811 Edgewater Rd., New York 59, N. Y. • DAyton 3-3900

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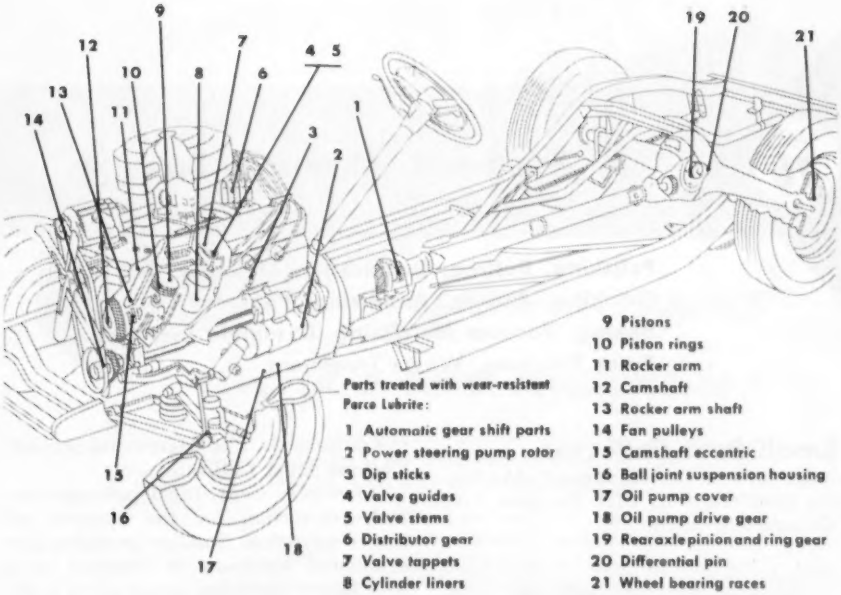


Parts treated with wear-resistant Parco Lubrite:

1 Automatic gear shift parts
2 Power steering pump rotor
3 Dip sticks
4 Valve guides
5 Valve stems
6 Distributor gear
7 Valve tappets
8 Cylinder liners
9 Pistons
10 Piston rings
11 Rocker arm
12 Camshaft
13 Rocker arm shaft
14 Fan pulleys
15 Camshaft eccentric
16 Ball joint suspension housing
17 Oil pump cover
18 Oil pump drive gear
19 Rear axle pinion and ring gear
20 Differential pin
21 Wheel bearing races

The automotive industry shows how to save money by using Parco Lubrite

Wearing surfaces—the vital parts that move or roll or slide against each other—can cost the manufacturer far more than their original price.

If one of them fails prematurely in use, because of improper break-in, there's the cost of replacement, the field service charge, and the customer's ill-will to be reckoned with.

To promote smooth, safe initial operation, to prevent galling, scoring and welding, and to lengthen subsequent life, friction parts should be treated with Parco Lubrite.

This nonmetallic, oil-holding coating eliminates metal-to-metal contact during wearing-in, keeps a film of lubricant between bearing surfaces, provides priceless protection for fractions of pennies.

Automobile manufacturers have cut field service costs by the use of Parco Lubrite. How about *your* product? Let the Parker technical representative investigate for savings!

DETAILED TECHNICAL INFORMATION

Technical bulletin, with photomicrographs and data, on Parco Lubrite wear-resistant coatings. Send for it. It's free.

Since 1914—leader in the field

PARKER RUST PROOF COMPANY
2172 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE	TROPICAL
corrosion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces	heavy duty maintenance paints since 1883

*Bonderite, Bonderlube, Parco, Parco Lubrite—Reg. U.S. Pat. Off.

For more data circle 345 on Postpaid Card

New Equipment, Materials, Processes

Polishing, Buffing, Degreasing, Cleaning, Barrel Finishing, Plating, Anodizing, Phosphatizing, Baking, Vacuum Metalizing, Chromate Coatings, Paint Finishing, Waste Treatment

Small Dust Collector

Manufacturer: Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

Model JCB-4 Junior Cyclone Dust Collector

Equipment: The Hammond Junior Cyclone Dust Collector.

Operation: Centrifugal precipitation and gravitation for the removal of larger particles. Smaller particles are exhausted outdoors or trapped in a bag; larger particles deposited in a receptacle at the base of the machine. Air can be recirculated if desired.

Specifications: Two capacities: 400 and 600 c.f.m. Blower wheel mounted on exhaust side to prevent clogging when sticky or stringy materials are being collected. Wheel is self-cleaning, paddle type, dynamically balanced to minimize vibration.

Applications: Collecting dust from light and medium dust-creating sources, including buffing, polishing, machining, grinding, other industrial processes. Complete information available from the manufacturer.

For more data circle 1 on Reader Service Card

★ ★ ★

Elastomer-Lined Centrifugal Pumps

Manufacturer: Ampco Metal, Inc., 1745 S. 38th St., Milwaukee 46, Wis.

Equipment: Low-head centrifugal pumps with linings of natural rubber, Neoprene and Hypalon.

familiar names

...in a new combination

A new name in metals—American Metal Climax, Inc.—arises from the merger of two well-known companies, The American Metal Company, Ltd. and Climax Molybdenum Company.

American Metal Climax, Inc. now offers expanded facilities and services. Its activities include mining, smelting, refining, marketing, exploration and research. Its products are molybdenum in all forms, potash, copper, lead, zinc, uranium, vanadium, tungsten, tin, solder, metal powders, precious and rare metals, selenium, germanium, tellurium, cadmium, cobalt, bismuth, arsenic, oil and gas, and others. Its interests circle the globe; principal business activities are in North America, Western Europe, and Africa.

AMERICAN METAL CLIMAX, INC.
61 Broadway, New York 6, New York

Climax Molybdenum Company – a Division
500 Fifth Avenue, New York 36, New York

Principal Subsidiaries of American Metal Climax, Inc.

AMERICAN CLIMAX PETROLEUM CORPORATION
New York, New York

THE AMERICAN METAL COMPANY OF CANADA LIMITED
Toronto, Ontario, Canada

THE ANGLO METAL COMPANY LIMITED
London, England

BLACKWELL ZINC COMPANY, INC.
Blackwell, Oklahoma

CÍA. METALÚRGICA PEÑOLES, S.A.
Monterrey, Mexico

CÍA. MINERA DE PEÑOLES, S.A.
Monterrey, Mexico

CLIMAX URANIUM COMPANY
Grand Junction, Colorado

HEATH STEELE MINES LIMITED
Newcastle, New Brunswick, Canada

RHODESIAN SELECTION TRUST LIMITED
Salisbury, Southern Rhodesia

SOUTHWEST POTASH CORPORATION
Carlsbad, New Mexico

UNITED STATES METALS REFINING COMPANY
Carteret, New Jersey

For more data circle 346 on Postpaid Card

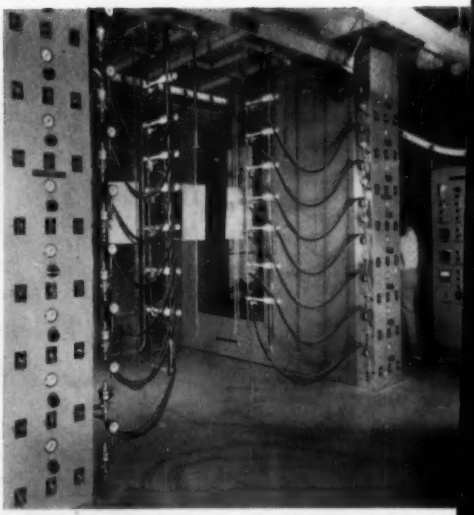
Features: Available in eight sizes, these pumps will handle muriatic acid, bleaching agents, mixed acids, cleaning and plating solutions, abrasive slurries, and other destructive media. Pumps are built to resist damage from stray currents in plating. They will protect liquids being handled from contamination. Special mechanical seals and packed stuffing boxes are interchangeable.

For more data circle **2** on Reader Service Card

★ ★ ★

"Packaged" Electrostatic Spray Systems

Manufacturer: H. G. Fischer & Co., Electrostatic Paint Spray Systems Div., 9451 Belmont, Franklin Park, Illinois. *To Page 82→*



Fischer Electrostatic Spray: standard units can take care of 85 per cent of the projects suitable for electrostatic paint spraying

Bond® TACK CLOTH

PACKED IN ROLLS OR IN BULK
JUST THE WAY YOU WANT IT!

Stays Soft and Tacky — A SPECK-FREE FINISH EVERY TIME — Now available in white or gold — in Four Different Types of Cloth.

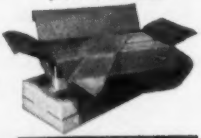
There's a big difference in TACK-CLOTHS—that's why BOND processes four different meshes of cloth with several types of formulations to give you the cloth that best "fits" your special needs. You can get BOND TACK CLOTH packed just the way that suits you best, too—in 150 yard Rolls of 36" wide cloth or in handy Cartons.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

All BOND TACK CLOTH is Spontaneous Combustion Proof, Lint-Free and Wax-Free. Gives a sparkling speck-free finish every time. Clean and Sanitary. No waste. Choice of Standard, Extra Tacky or Less Tacky.

IN ROLLS

Cut off any size piece as needed.



IN BULK

Size is 18" x 36"—folded to 4½" x 18" or 9" x 18" for ease of handling. Cut and folded—ready to use. Also Individually Packed in Glassine Envelopes —144 to the carton—

TRY THEM AND COMPARE RESULTS. Samples gladly sent upon request.
A WARRANTY OF SATISFACTION IN EVERY CARTON.

Bond® CHEMICAL PRODUCTS CO. 2639 N. CLYBOURN AVE. CHICAGO 14 • ILLINOIS

"The Tacky Wiper Specialist"

For more data circle 347 on Postpaid Card

REPORT NO. 1 / ON LOWERING TODAY'S COST OF PRODUCTION

Enough DIVOBOND to phosphatize 1,000 sq. ft. of work

low cost, scale-free phosphatizing

One-half pound of Divobond in solution covers 1,000 sq. ft. of work with a dense, tight, uniform iron phosphate coating. Using less compound to initiate a better finish automatically lowers production costs.

Another cost-cutting Divobond feature is its remarkable scale prevention action. Even in hard water areas, plants report a year or more of continuous operation without a sign of scale. Build-up is eliminated and nozzles are free to spray on even, uniform coatings, thus eliminating appreciable maintenance costs. This scale prevention also lowers heating costs by keeping coils free of insulating blankets of scale.

Divobond is easy to control. Its non-critical pH permits operation through a wide range. A simple titration shows solution concentration.

Divobond may be used in two and three stage washers with mild steel equipment. Reduced capital equipment requirements and economical surface preparation possible with Divobond suggests consideration in your plant.

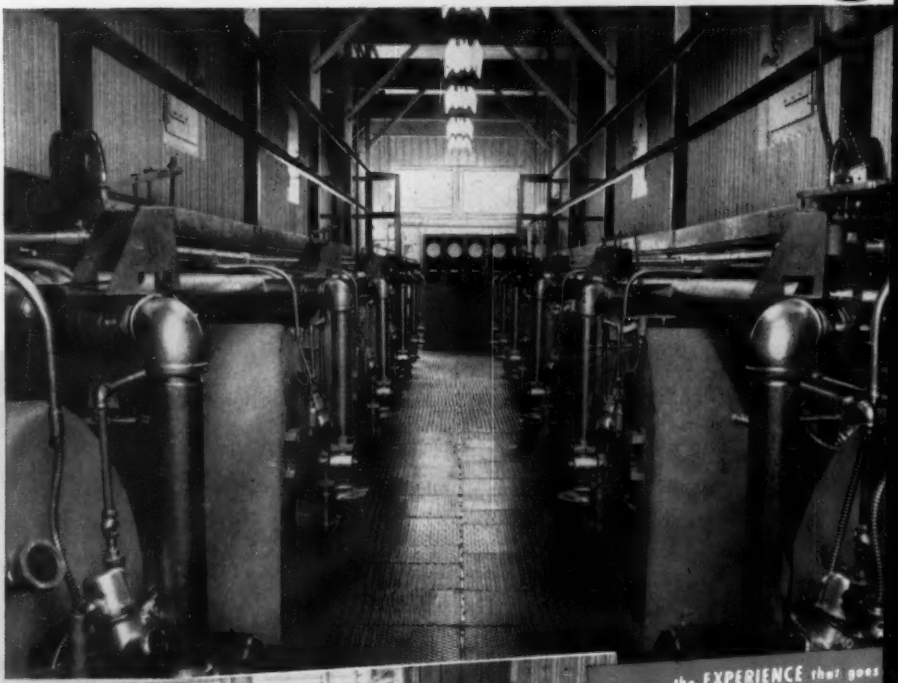
Ask your D-Man for a plant survey to determine Divobond's advantages in your operations. Or, for Divobond literature, write to *Metal Industries Department, The Diversey Corporation, 1820 Roscoe Street, Chicago 13, Illinois.*

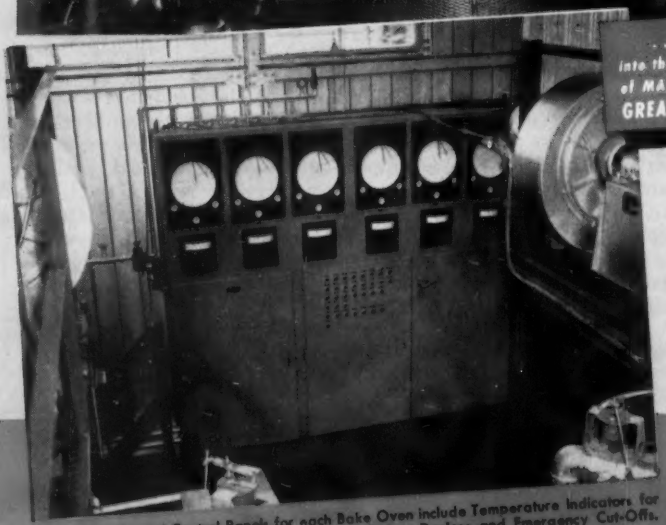
PLANTS IN CHICAGO, NEWARK, AND SOUTH GATE, CALIF. WAREHOUSES IN PRINCIPAL CITIES.

DIVERSEY **DIVOBOND**

For more data circle 348 on Postpaid Card

Processing





. . . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!

Above is an Interio View of the Oven Enclosure o the Roof. This View shows th Two Parallel Bake Ovens— One on the Left and One o the Right—the Arrangement o the Twelve Heating Unit Walkways for Oven acce Doors, and the Control Pan for one of the ovens at the fa end. This installation is typic Mahon Construction throughou

Central Control Panels for each Bake Oven include Temperature Indicators for each zone, Temperature Recorders, Safety Devices and Emergency Cut-Offs.

M

OVENS

Exterior View of Oven Housing on the Roof of the Plant. Walls and Roof of the Enclosure are of Incombustible, Double Rib, Interlocking Roll-Formed Steel Plates. Conveyor Tunnels and Ramp Enclosures are of the same material.

800° Radiator CORE BAKE OVENS
Solder Radiator Tubes and Center Cores!

The Radiator Core Bake Ovens, illustrated here, were recently installed and housed by Mahon on the roof of an automobile radiator manufacturer's plant. The two parallel ovens, which normally operate at 800°, were designed for emergency temperatures up to 1000°. Each oven has six heating zones . . . controls, temperature recorders, safety devices and automatic emergency cut-offs are contained in compact control panels. The exterior housing which encloses the two ovens, and conveyor lines to and from the ovens, is an integral part of the oven construction on two sides. This installation is typical of thousands of Mahon solutions of production problems demanding specially engineered processing equipment. When you are in need of a special processing oven, or special production equipment of any kind, you will want to discuss your requirements with Mahon engineers . . . you'll find them better qualified to advise you on both methods and equipment requirements. And, because Mahon can point to over thirty-five years of successful operation in this highly specialized field, and has the experienced engineering staff and fabricating and erection facilities to handle any type of project large or small, you can be assured that their advise and recommendations will be sound and unbiased. See Sweet's Plant Engineering File for information, or write for Catalogue A-658.

THE R. C. MAHON COMPANY, Detroit 34, Michigan • Branch Offices in New York and Chicago

Engineers, Fabricators and Erectors of Special Processing Ovens of All Types; Metal Cleaning and Rust Proofing Machines; Conveyorized Cleaning and Pickling Machines; Dry-Off Ovens, Cooling Tunnels, Spray Booths, Flow Coaters, Dip Coaters, Finish Baking Ovens, and Complete Conveyorized Finishing Systems; Core Ovens, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and Many Other units of Special Plant and Production Equipment.

AHON

New Equipment, Materials

Equipment: Six standard electrostatic paint spray systems, which are said to be able to handle 85 per cent of the projects suitable for use of electrostatic spray.

Operation: Articles being painted pass through the spray booth on a conveyor. Spray guns and ionizing electrodes are suspended from an overhead trolley. The paint spray from the guns passes through an electrostatic field set up by the electrodes, which are charged with 100,000 volts. The paint particles pick up an electrical charge as they pass through. Products being painted are electrically grounded, and the electrically charged paint particles are drawn to them. The result is a uniform film of paint on the products.

Spray guns can be adjusted backward, forward or down, and can be tipped to any angle desired while still maintaining the proper distance between spray guns and electrodes at all times. Spray guns turn on and off automatically to avoid spraying at open spaces between products.

Power rotators are installed in spray booths where products must be turned to paint all sides as they come through. The rotator is a flat moving belt powered by a variable - speed motor. Skate-wheel-type rotating pendants come in contact with the moving belt and cause the products suspended from them to rotate. The speed of rotation can be accurately controlled.

TO ADD BEAUTY, COLOR AND SALES APPEAL
FOR CUSHIONING
FOR SILENCING

FOR A DURABLE PROTECTIVE COATING

INVESTIGATE *Cellusuede* FLOCK

THE PRODUCT FINISH *with* A THOUSAND USES

Every day product designers, industrial finish and material engineers are finding new, profitable uses for Cellusuede Flock—industry's most versatile product coating. With these cotton, rayon or hair fibers, you can add new beauty, color, and sales appeal to your product, provide a durable protective finish, silence noises, or dampen vibration. Best of all, the soft velvet-like Cellusuede finish is easy to apply to wood, metal, plastic, fabrics, leather, cardboard, or paper surfaces, either on a modified or production line basis. It's inexpensive, more durable than fabric, and readily available in a wide range of textures and beautiful colors. Investigate today the profit possibility of using Cellusuede for your product.

FREE BULLETIN—SAMPLES, TECHNICAL SERVICE

Write for 12-page bulletin illustrating profitable uses and applications. For help with a specific job, Cellusuede's technical service and unexcelled facilities are available for producing samples to meet your needs.

CELLUSUEDE PRODUCTS, INC.
Producers of Natural and Synthetic Flock
512 N. MADISON STREET • ROCKFORD, ILL.
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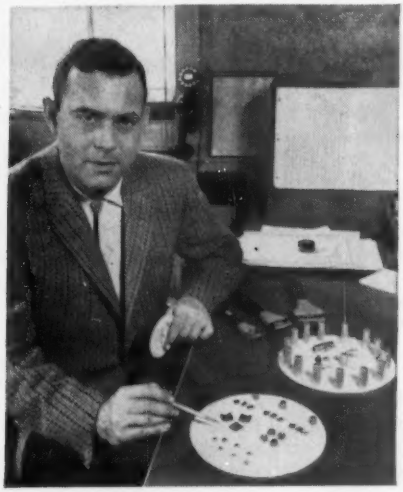
PROGRESS REPORT OF TYPICAL SCREW PRODUCTS CO....



"ALMCO barrel finishing speeds deburring, saves labor costs, stimulates new business!"

Executive of screw products company points to paint scraper nuts and coupler jaws finished with Almco machines and methods.

FAST, EFFICIENT FINISHING ON EVERY JOB! That's the guarantee at one hustling Midwest firm where Almco equipment has replaced hand methods. Now this job shop benefits four ways with this modern finishing method.

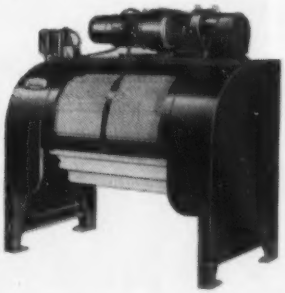
Parts are deburred faster and better . . . finishing costs are slashed . . . customers get swift, satisfactory service . . . parts too small for manual methods can now be profitably finished!

HERE ARE TYPICAL EXAMPLES: This shop formerly handled only 3600 paint scraper nuts a day by belt sanding, a method that left many burrs. Now 64,000 nuts may be deburred daily with Almco equipment. Savings total 97.3% over former methods, all burrs are smoothly removed.

- Grease gun coupler jaws (¼"x⅜") could not be finished manually because of small size. Now up to 40,000 are deburred in 10 hours with Almco equipment.
- Heavy burrs on push button switches could not be readily removed without barrel finishing. Now up to 10,000 per hour can be finished with Almco equipment.

GET FREE SAMPLE PROCESSING. Find out what Almco barrel finishing can do for you. Almco's technical staff will examine your product parts, run them through sample processing. You'll get a detailed report without obligation. Send in your sample parts with specification requirements.

ALMCO MODEL DB-400



The DB-400 is a medium capacity machine with a standard barrel size of 30" x 48". Barrels with 1 to 4 compartments can be furnished.

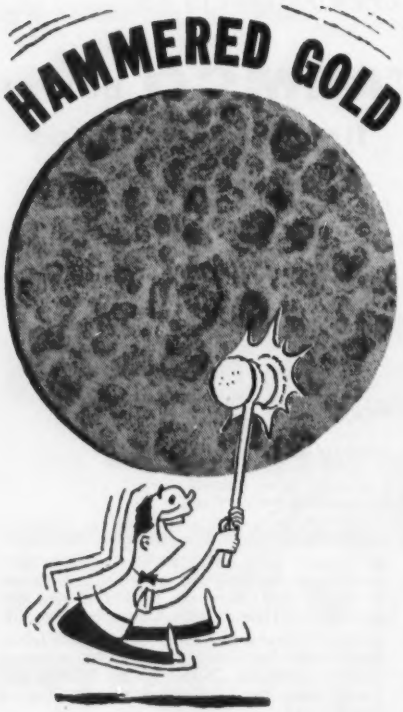
SEND FOR THIS NEW BARREL FINISHING HANDBOOK

52 pages of facts, photos, data and cost comparison charts. Write for your personal copy today.

ALMCO

QUEEN PRODUCTS, INC.
82 Marshall Street • Albert Lea, Minnesota
Subsidiary of KING-SEELEY Corporation
Sales Engineering Offices in Chicago, Detroit, Los Angeles, Newark, New Haven and Philadelphia
IN ENGLAND: *Almco Division of Great Britain Ltd., Hitchins, Herts, England*

For more data circle 351 on Postpaid Card



Now . . . in gold . . . hammer so real you'll marvel at its illusion of depth. And only one coat does the trick of covering all imperfections. Available also in copper, brass and platinum. Send for samples today.

SEA-LAC

DURALAC CHEMICAL CORP.
84 LISTER AVENUE, NEWARK 5, N. J.

For more data circle 352 on Postpaid Card

Specifications: All systems are sold complete with spray booths, spray guns, electrodes, power rotators, pressure control panels, electrical control panels, and high-voltage transformers.

Atomizing air-pressure regulators are adjustable to compensate for variations in flow rate, viscosity and temperature.

Each spray gun is supplied through an accurate paint pressure regulator. Flow rate can be adjusted upward or downward, as required, remains constant when regulator is set.

All electrical controls are mounted on a single board, with the necessary interlocks to conform to National Board of Fire Underwriters' Code. Other safety devices make the unit safe to operate and protect it from damage.

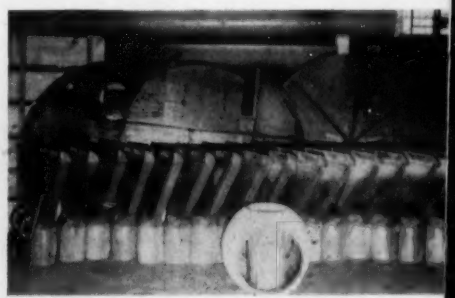
High-voltage transformer operates on a 110-volt, single-phase line and has a total load of less than 1,000 watts. Its maximum output is 160,000 volts at 5 milliamperes.

For more data circle **3** on Reader Service Card

★ ★ ★

Plastic Equipment

A plastic resin reinforced with fiberglass has been developed by Haveg Industries, Inc., Wilmington, Delaware.



Haveg fume hoods and ducts, and tank covers fabricated from a fire-resistant, corrosion-proof plastic designated as Haveg 6610.

OFHC® COPPER

ONLY AMERICAN METAL CLIMAX MAKES IT

And anodes made of OFHC copper are produced only by American Metal Climax.

OFHC stands for Oxygen Free High Conductivity copper. OFHC copper is the only oxygen-excluded copper—it is not deoxidized copper.

Plating with OFHC Copper Anodes therefore means:

more usable copper per anode.
smoother finishes.
product uniformity.
no bags or diaphragms.

Technical assistance and additional information available upon request.

Metal Sales Department
AMERICAN METAL CLIMAX, INC.
61 Broadway, New York 6, N. Y.

For more data circle 353 on Postpaid Card

Said to provide complete corrosion resistance to a wide range of conditions, this formulation, Haveg 6610, has good impact strength, yet is light in weight. A further advantage: good fire resistance. This resin will not support combustion, the manufacturer states.

A complete range of standard and special tanks, fume ducts, hoods, towers, trays, and other process equipment made of this resin is being offered.

For more data circle 4 on Reader Service Card

★ ★ ★

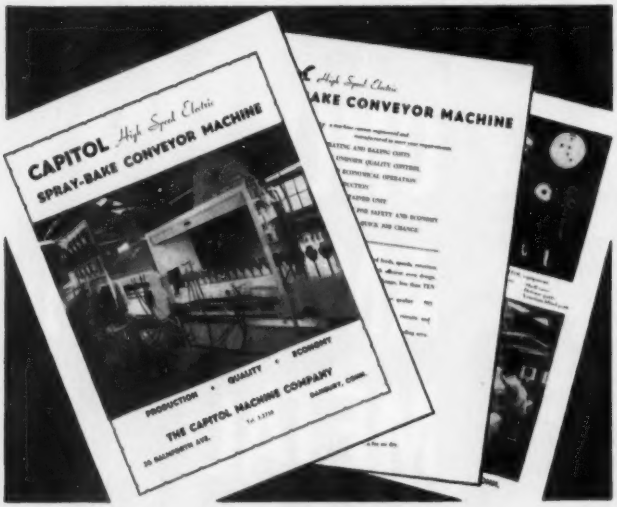
Automatic-Turntable Barrel Finisher

Manufacturer: Almco, Queen Products, Inc., 82 Marshall St., Albert Lea, Minnesota.

Equipment: A 6-station automatic barrel finishing system, mounted on a turntable and equipped with a "memory" device.

Description: Six barrel finishing machines are mounted on a turntable, which brings them around for loading and unloading at a single station. All materials for loading and unloading the barrel are conveniently available at this point; thus one man can handle six barrel finishing machines without moving from his station. All of this is done on an automatically timed cycle.

Operating Cycle: As the operator loads a barrel from push-button - controlled media storage bins, he sets its timer. This time (15 minutes to 50 hours) is recorded on the turntable's



Descriptive folder on Capitol Spray-Bake conveyor machines . . .

Capitol has a long proven background in the custom engineering and manufacture of spray bake conveyor units. Capitol equipment speeds production, lowers spray and bake costs, assures uniform quality control, quick job change . . . offers many unique design advantages. Complete consultation service— write for full information.

THE CAPITOL MACHINE CO. 36 BALMFORTH AVENUE DANBURY, CONNECTICUT

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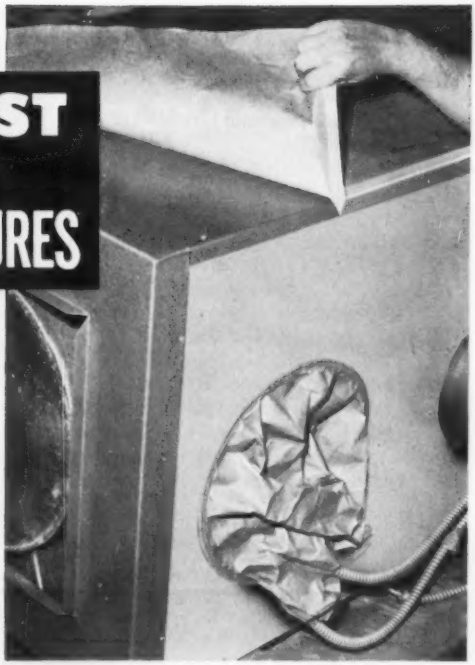
HOLDS FAST IN HIGH TEMPERATURES



Shuford's **SHURTAPE**®

Shuford's SHURTAPE CP-15 is especially designed for masking on finishes subject to extreme heat in the baking process . . . and it costs less to use!

This rubber impregnated crepe paper backed pressure-sensitive tape is flexible, adheres instantly and strips clean quickly. Withstands very high temperatures of bake ovens.

Use Shuford's SHURTAPE CP-15 on any flat or crinkled surface!

For complete information, write

CLOTHES LINES • TWINES
PRESSURE-SENSITIVE PAPER TAPES
SASH CORDS • WEATHER STRIPPING
COTTON & RAYON YARNS • EXTRUDED PLASTICS

Shuford Mills, INC SINCE 1880
HICKORY, N. C.

World's Largest Manufacturer of Cotton Cordage
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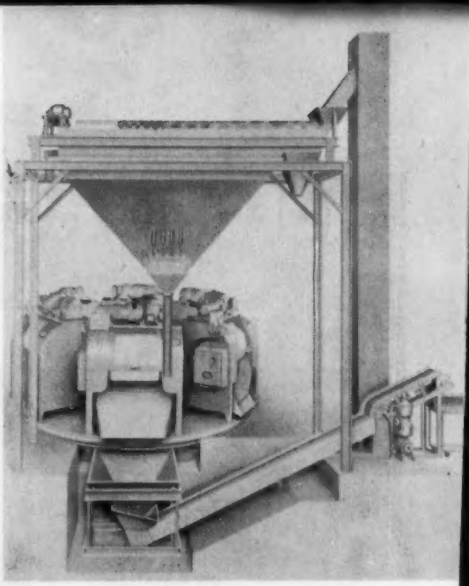
3225

"memory" device. The turntable takes the barrel finishing machine to its station and moves another barrel in for loading. Each barrel can be individually timed. A single system is used for loading, unloading, rinsing, draining, and separating, classifying and storing media. When the preset time cycle has been completed, the turntable automatically brings the barrel back into position for unloading.

As each completed barrel load returns to the operator for unloading, the work parts and media are dumped onto a conveyor belt which transfers them to a magnetic separator. The ferrous parts are separated from the chips and pass up and over a demagnetizing coil, and on to a pick-off table or wire baskets.



Almco's Six-Station Barrel Finishing Machine: loading and unloading at a single point

If both ferrous and non-ferrous parts are being processed, a high-

Specialists in the Unusual
SINCE 1901

Rhodium
ELECTROPLATING SOLUTIONS

Technological knowledge acquired through many years of experience, plus special processes and equipment, assure the high quality of our Rhodium Plating Solutions.

Recommended for contact surfaces of switches, waveguide parts and other electrical applications, such as printed circuits...Can be applied in extremely heavy deposits, up to 100 milligrams per square inch.

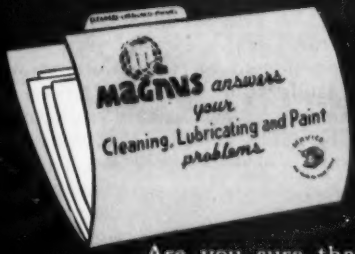
Rhodium plating provides the advantages of whiteness, lustre and corrosion resistance of a precious metal.

Consult our staff, without obligation, about your specific plating problems.

SIGMUND COHN MFG. CO., INC.
121 SOUTH COLUMBUS AVENUE · MOUNT VERNON, NEW YORK

For more data circle 356 on Postpaid Card

THE ANSWERS TO YOUR CLEANING PROBLEMS



FREE *in a single, convenient file folder*

Are you sure that your present cleaning methods are the best possible? If not, you owe it to yourself to write today for free complete information on the successful methods now in use and backed by Magnus, the one source for every cleaning need—materials, methods and machines.

CLIP and MAIL

MAGNUS CHEMICAL COMPANY, INC.
208 South Avenue, Garwood, New Jersey

Please send me your FREE file folder with complete information on the following subjects:

- ☐ ALKALINE CLEANING
- ☐ BARREL DEBURRING AND BURNISHING
- ☐ CLEANING MACHINES
- ☐ DESCALING
- ☐ DRAWING AND STAMPING LUBRICANTS
- ☐ ELECTRO CLEANING
- ☐ EMULSION CLEANING
- ☐ PICKLING
- ☐ PHOSPHATIZING CLEANING
- ☐ PRE-CLEANING
- ☐ RUST PREVENTION
- ☐ RUST REMOVAL
- ☐ STRIPPABLE SPRAY BOOTH COATING
- ☐ SPRAY BOOTH WATER CURTAIN CONTROL
- ☐ STRIPPING FINISHES

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INDUSTRIAL CLEANING DIVISION

magnus
CHEMICAL COMPANY INC.

magnus a world-wide organization specializing in cleaning and protection of all surfaces.

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frequency vibrating screen can be added to the materials-handling system for separating parts from media.

In either case, the media feeds directly into the boot of an internal-discharge bucket elevator, which carries the media to an overhead rotary screen media classifier, which separates the different sizes of media into proper storage bins. As many as six different media can be used.

For more data circle 5 on Reader Service Card

★ ★ ★

Cob Grits Clean Castings

Cob grits supplied by Ti-Co Industries, Inc., are being used in blasting equipment to clean molding and core sands from castings. Certain adjustments in the blasting equipment must be made, in order that the equipment can perform efficiently with the cob grits, which are lighter than other abrasive blasting materials.

Some of these adjustments are as follows:

1. Shut off almost completely the air suction pipe and air vents leading to the dust collector.
2. Open necessary feeder valves and other openings so that a sufficient quantity of cob grits can enter the blasting machine per unit time.

In some plants a wire mesh screen has been put in the elevator over the housing in the air suction pipe to prevent good cob grits from being sucked into the dust collector. This practice returns good grits

FORMAX
ZIPPO
SISAL BUFFS
A Dual-Purpose
Polishing and Buffing Wheel!
Call for Zippo Sisal Buffs when you have need for a fast cutting, heavy duty wheel to remove surface imperfections from ferrous metals. You will find they serve excellently to blend and smooth stretcher strains, orange peel, light die marks and polishing wheel grit lines. And—at the same time leave a bright surface finish.
Write for Descriptive Literature
FORMAX MFG. CORP.
DETROIT 7, MICHIGAN
"THE FOUR McALEERS"
For more data circle 358 on Postpaid Card

Greater convenience for you!

HARSHAW NOW SHIPS FLUOBORATES IN NON-RETURNABLE CONTAINERS

Harshaw's use of this 5-gallon polyethylene-lined steel pail brings important benefits to you:

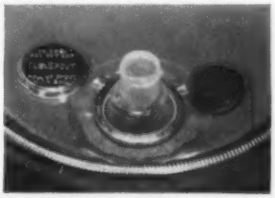
Convenient Stacking

YOU SAVE MONEY!

- No containers to return
- No records to keep
- No container deposit
- No return freight charges
- Less freight on incoming shipments

YOU SAVE WORK AND TIME!

- Light container—easy to handle even when full
- No special pouring equipment needed
- Built-in (pull out-push in) spout
- Specially designed for easy stacking



Pull Out-Push In Spout

These Harshaw fluoborate chemicals are now shipped in non-returnable containers:

Cadmium Fluoborate Solution
Copper Fluoborate Solution
Fluoboric Acid • Hydrofluosilicic Acid
Lead Fluoborate Solution
Nickel Fluoborate Solution
Tin Fluoborate Solution • Zinc Fluoborate

Enter your order today—the same high quality Harshaw fluoborates, and in a convenient new container.

THE HARSHAW CHEMICAL COMPANY

1945 E. 97th Street • Cleveland 6, Ohio

CHICAGO, ILLINOIS
CINCINNATI, OHIO
CLEVELAND, OHIO
DETROIT, MICHIGAN
HOUSTON, TEXAS
LOS ANGELES, CALIF.
HASTINGS-ON-HUDSON, N.Y.
PHILADELPHIA, PENNA.
PITTSBURGH, PENNA.

For more data circle 359 on Postpaid Card

to the blasting machine, and allows dust to continue to the dust collector.

Further details about proper operation with cob grits, together with an analysis of savings which can be made by using these cob grits, are available from Ti-Co Industries, Inc., P. O. Box 185, Tipton, Indiana.

For more data circle **6** on Reader Service Card

Plastic Coating Process

A process by which plastic materials such as nylon and polyethylene can be coated on metal, ceramics and other materials has been announced by Lehigh Research and Development Corp., 2121 S. 12th St., Allentown, Pa.

The coating is applied without the use of liquids or solvents. Parts to be coated are first sandblasted and then preheated above the melting point of the coating material. The parts are then dipped into a bed of specially prepared, finely divided coating powders, which are "fluidized" by ascending currents of gas or air. The "fluidized" state of the coating powders is maintained by specially designed dipping tanks.

The coating adds the characteristics of the coating material selected, thereby enhancing the strength, rigidity or other properties of the coated article. The low friction surface produced by such coatings as nylon reduces noise on metal-to-metal contacts. With nylon the process gives additional wear resistance, along with low friction where normal lu-

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1 to 7½ H.P. Ball Bearing V-Belt Drive. Pre-determined speed set at factory or to your specifications. Buffing wheels and compounds available for every industry . . . Special compounds recommended for Special applications.
SINGLE BARREL TUMBLER
Size: 30" x 36" or engineered to your specifications. Barrels lined with kiln-dried and glued maple. Child's play to operate. Economical on space as motors are individually mounted overhead—double decked or single. Tumbling supplies available also.
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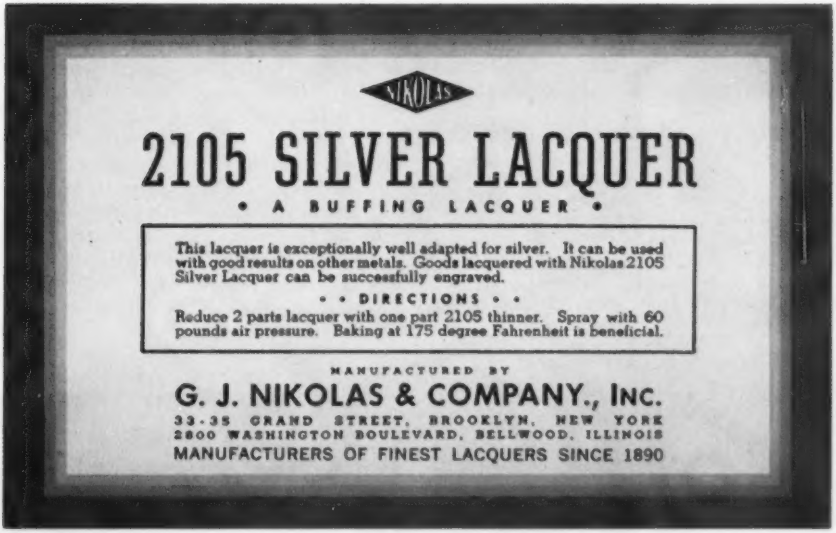
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2105 SILVER LACQUER
• A BUFFING LACQUER •
This lacquer is exceptionally well adapted for silver. It can be used with good results on other metals. Goods lacquered with Nikolas 2105 Silver Lacquer can be successfully engraved.
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Reduce 2 parts lacquer with one part 2105 thinner. Spray with 60 pounds air pressure. Baking at 175 degree Fahrenheit is beneficial.
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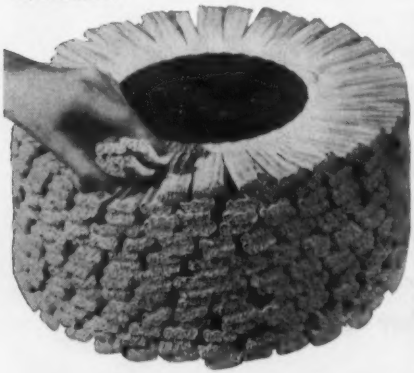

Write us your problem.

• Churchill Finger-Buffs* are made from sisal or cloth; always bias-cut and top grade material; in all sizes from 3" to 21" diameters.

*Churchill Finger-Buff, T.M. Reg. U.S. Pat. Off.

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Geo. R. Churchill Co., Inc.

Dept. PF-28, Hingham, Mass.

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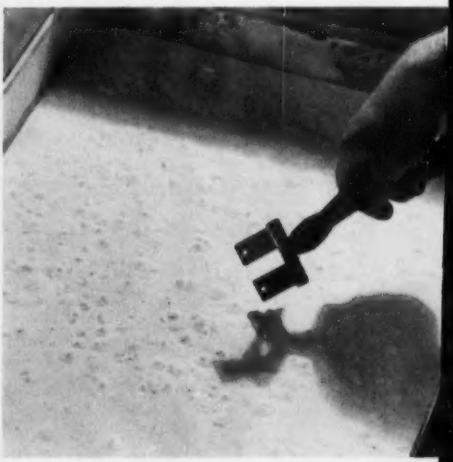
brication is difficult or impossible. It imparts nylon's resistance to solvents and alkalis, tends to inhibit rust and corrosion, and provides good insulation. Without the use of solvents, relatively heavy coatings can be obtained with a single dip. And the process produces uniform coatings on irregular shapes, the manufacturer states.

The custom coat process was invented in Germany. Lehigh Research is one of the licensees authorized to use it. Custom coating is applicable to small parts in assorted colors. Metals thinner than 0.0625 inch are difficult to coat because they do not maintain the necessary heat during the coating process, the manufacturer states.

Typical parts coated by this process include steel sliding surface springs, jigs, fixtures, bushings, rollers, loading hooks and tool parts.

For more data circle **7** on Reader Service Card



A part being immersed in a fluidized bed of nylon. Part has been preheated, will have smooth coating of nylon when removed from the coating tank. Process is also useful in applying other plastics to metal parts.

Brighter finish costs less with NIALK® TRICHLORethylene

What do you do when a part that's supposed to be bright and glossy comes out of the vapor degreaser dull—tarnished—unacceptable for finishing?

Faced with this problem, The Plume & Atwood Mfg. Co., Thomaston, Conn., switched to NIALK TRICHLORethylene.

Result: immediate improvement. Parts come out of the degreaser untarnished and immediately ready for further processing.

No more sour baths

Solvents previously used at P and A had to be dumped *every three weeks* to keep the degreaser bath from going sour. The first charge of NIALK solvent functioned without trouble for *nine weeks*.

At this point P and A installed newer degreasing equipment. Since then, NIALK TRICHLORethylene *has remained in service more than six months without once going sour.*

Only NIALK has psp

This example shows why you get *more effective, lower-cost* degreasing when you use NIALK TRICHLORethylene with **psp**—*permanent staying power.*

You *never* have to replenish the neutral stabilizer in NIALK. After many distillations, it's still there—working to prevent acid formation and other causes of breakdown. You go much longer, and degrease many more parts, between clean-outs.

For better degreasing, do this

See for yourself how you can keep *your* degreasers operating efficiently with NIALK—long after other solvents have lost their punch. Write us today on your business letterhead for the complete facts, including a resumé of comparative metallurgical tests on five leading brands.

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For more data circle 363 on Postpaid Card

Coating Resin

Manufacturer: Shell Chemical Corporation, 50 W. 50th St., New York 20, N. Y.

Material: Resinous Polyol X-450, a hard, colorless coating resin said to have many properties that should make it valuable for use in industrial coatings. Drum quantities available from Shell Chemical's Market Development Department.

For more data circle 8 on Reader Service Card

★ ★ ★

Test-Panel Sprayer

Manufacturer: Eclipse Air Brush Co., 390 Park Ave., Newark 7, N. J.

Equipment: The Eclipse Test Panel Unit, a device to spray paint on test panels in a manner that can be duplicated by the machine as often as desired, so that sprayed colors can be matched under standard conditions.

Description: Essentially, the unit consists of a box 12 inches high, 15 inches wide and 28¼ inches long, with an arm to hold the test panel and carry it past the spray gun at a specific speed. The gun holder can be set for distance (6 to 18 inches), angle and height (6 inches above or below center line of panel). Any spray gun can be used. The speed at which the test panel moves is variable (300 to 2500 inches per minute), and can be read on a gage. The unit is driven by compressed air, making it ex-

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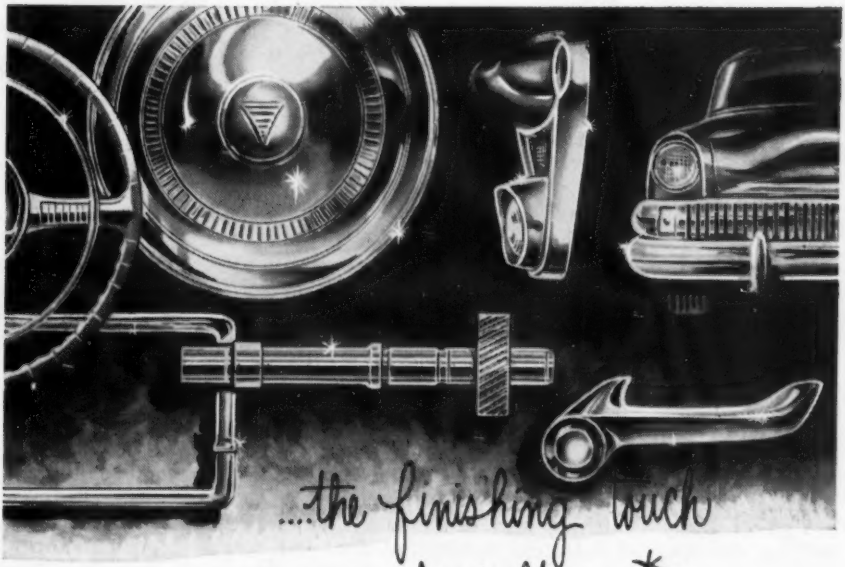
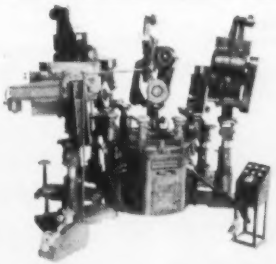


Are finishing methods a "trouble spot" in your operations? More and more cost conscious production men are turning to high-speed automatic polishing and buffing machines. You get faster, low cost polishing, buffing, deburring and more uniform results on a PACKER-MATIC, and you can also have the extra advantage of automatic loading and unloading. Long production runs, short odd-lot jobs, or a mixture of both can easily be handled. Send blueprints or sample parts and let Packer engineers show you how to speed up production and cut costs with PACKER-MATIC.



*The finishing touch on automotive parts and accessories is just one of many successful PACKER-MATIC applications.

PACKER-MATIC

THE PACKER MACHINE COMPANY • MERIDEN, CONN.

Pioneer Manufacturers of Automatic Polishing and Buffing Machines

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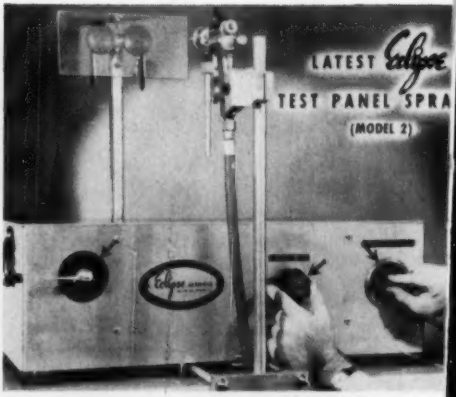
plosion proof. To overcome difficulties in matching when one sprayed swath overlaps another, an attachment permits lapping two swaths on one panel.

Panels of any size can be used, from 3 by 5 inches to 12 by 14 inches. The panels are held in place by venturi-operated suction cups.

Operation: The panel is placed in or in front of a spray booth. The spray gun is locked in place with a thumb screw. When the gun is directed as desired, the panel is placed on the carrier, the machine is turned on, and the panel begins to reciprocate at a set speed in front of the gun. The operator depresses the trigger for one or more passes, according to specifications for the job.

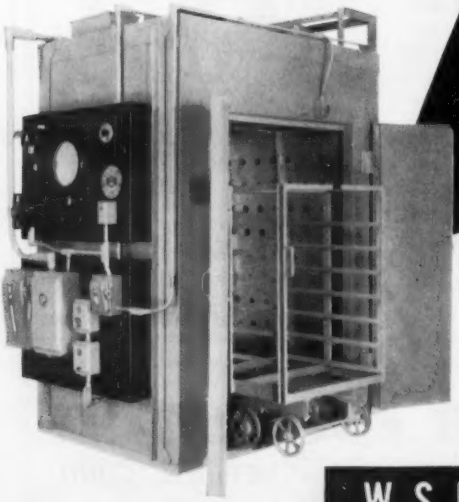
Typical Uses: Matching and controlling any sprayed industrial finish. The unit is especially valuable for



Test-Panel Sprayer: accurate duplication

maintaining a standard color when a finish is applied in several plants producing parts used on the same product. This often happens in the automotive and appliance-manufacturing businesses. The panel sprayer is also

DRY FINISHES MORE UNIFORMLY and FASTER



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You get complete product uniformity—high speed drying—and full operating safety in Rockwell Standard Recirculating Ovens.

Made in cabinet and truck or rack types — gas, electric, oil or steam heated — with interlocked temperature, heating and recirculating safety system. Wide range of sizes.

Conveyor ovens are built to special operating requirements.

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2908 Eliot Street • Fairfield, Conn.

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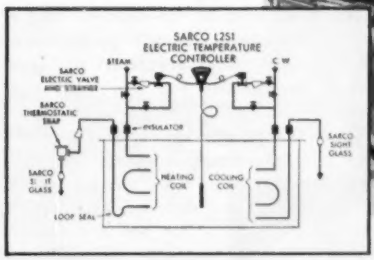

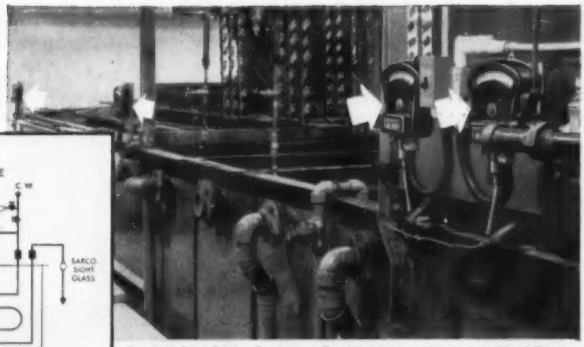

Seventeen Sarco Electric Temperature Controllers help maintain high quality plating—cut costs—at Ronson Corporation, Delaware Water Gap, Pa. Controllers are used on chrome, nickel, copper, silver, and gold plating tanks. This is a repeat installation.

Improve plating quality—cut your costs with low-cost temperature control

Unstable bath temperatures . . . the result of erratic manual temperature control . . . are sure to lead to costly rejects, wasted man-hours and breakdown of plating solutions.

You can solve these problems at *low cost* . . . by installing always-reliable Sarco Automatic Temperature Control. Just think . . . a complete Sarco System is yours for as little as $130 a tank!

1. **You improve plating quality** because creeping temperatures are a thing of the past.
2. **You lower rejects** because solutions are held automatically to pre-set temperatures. No chance for human error to mess up a tankload . . . and cut into profits.
3. **You get better utilization of time** —platers are able to concentrate on their plating work. No worrying about bath temperatures. No turning on and off of valves.
4. **You save plating solutions** — because automatic control prevents boil-off caused by overshooting temperature.

Write for Bulletin 1025-B or consult your plating supplies jobber. Sarco Company, Inc., 635 Madison Avenue New York 22, N. Y.

Sarco L5I Electric Temperature Controller

A COMPLETE SYSTEM FOR AS LITTLE AS $130 A TANK!

Think of it . . . automatic temperature control that often pays for itself in weeks!

Easy-to-read controller dial clearly indicates temperature being maintained. Temperature setting quickly changed by turning one knob.

2224-B

SARCO *improves product quality and output*

TEMPERATURE CONTROLLERS • STEAM TRAPS • STRAINERS

Self-operated Cooling Controls | Electric Valves (solenoid) | Strainers | Dial Thermometers | Degreaser Vapor Line & Safety Controls | Float-Thermostatic Steam Traps | Thermostatic Steam Traps | Thermodynamic Steam Traps | Self-Operated Temp. Reg.

For more data circle 367 on Postpaid Card

suitable for producing accurate duplication of film thicknesses for exposure, salt spray and chemical resistance testing of finishes. The machine will duplicate the results obtained from automatic spray guns, so that a "pilot run" can be made under controlled conditions.

For more data circle 9 on Reader Service Card

Tin-Lead Plating Solutions

Manufacturer: Dalic Metachemical, Ltd., 121 Judge Rd., Toronto 18, Ontario, Canada.

Materials: Plating solutions that allow tin and lead to be plated singly or in combination, in any proportion of value to the user. Solutions are formulated specifically for use with the Dalic selective-area plating process.

Solution Characteristics: Slightly alkaline (tin has a pH of about 7.5, and lead ranges from 8.0 to 8.5). Will not set up corrosion cells, will not cause embrittlement, will not attack neighboring metals. High current densities may be used. Recommended plating voltage: 12 volts. Rates of deposition: as much as 1 mil thickness per square inch per minute.

Deposit Properties: Dense deposits, fine-grained, may be burnished to a high gloss with cotton batting alone, without the use of buffing compound. Deposit is hard.

The Dalic process, for which these solutions were formulated, is a method of plating small areas and hard-to-get-at places. It makes use of a

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WORK CLOTHES!
ALKALI IKE
.. and we take this opportunity to offer you a trouble-free method of preparing steel for painting—
APEX "169"
Cleaning and
Coating Compound
Easily adapted to the simplest procedure for cleaning and phosphatizing steel parts prior to finishing. The amorphous chemical coating formed will provide maximum rust resistance and greatly enhance paint adhesion.
Your Inquiry Will Be Appreciated.
Apex ALKALI PRODUCTS CO.
A complete line of Cleaning Compounds for the Metal Finishing Industry
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SYRACUSE BOSTON DETROIT ATLANTA PITTSBURGH WEST HARTFORD
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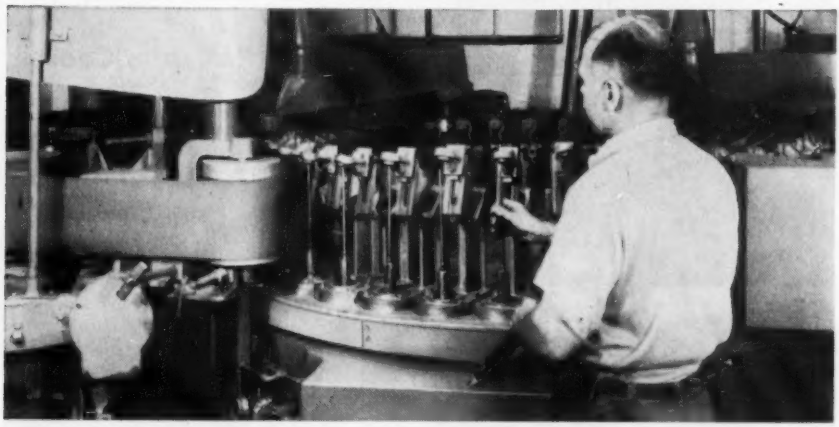
MICHIGAN BELTS Pre-Plate-Polish 1000 Rough Steel Forgings Per Hr.



MICHIGAN ON-THE-JOB FACTS:

OPERATION: Merry-Go-Round (four-head) roughing, finishing and pre-plate-polishing gear shift levers.

MATERIAL: 10-38 steel forgings.

ABRASIVE BELT: Four MICHIGAN RED COAT A/O metal-working cloth belts.

LOCATION: GENERAL PRODUCTS, INC., Jackson, Michigan.

No matter how simple or complex the machine you fit-out with an abrasive belt, it's the *belt* that finishes the piece. That's why General Products, like many others, keep Michigan Abrasive RED COAT Brand belts on the job. They *know* their investment in men and machines depends on the performance of the belts they use to deliver peak production at lowest possible cost . . . to deliver a profit!

Every day, new customers are being amazed at the *additional* production and superior finishes they get by just switching to Michigan RED COAT Brand belts on their existing machines. Michigan belts are *sharper cutting, smoother finishing and more resistant to loading* . . . you will find they deliver new-belt performance far longer than anything you have ever used.

Michigan Abrasive is the fastest growing manufacturer of coated abrasives in the country . . . and no wonder! The proof is in *performance*.

See what the RED COAT Brand of coated abrasives can do for you. Call your Michigan representative or mail coupon for free, complete catalog and representative will call you for an appointment. You will never know if your finishing costs are at rock bottom unless you do!

MICHIGAN ABRASIVE CO.

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Michigan ABRASIVES

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Tin and Lead: used for the Dalic Process

graphite anode wrapped in cotton and saturated with the plating solution The part to be plated is made the cathode. Passing current as the stylus is wiped over the area to be plated causes metal to be deposited in this area.

Typical Applications: Bearing surfaces and surfaces where subsequent soldering is to be done.

For more data circle **10** on Reader Service Card

★ ★ ★

Chemical-Resistant Coating

Manufacturer: Mono-Seal Products, 44 Garden St., Everett 49, Mass.

Description: Mono-Seal, a chemo-setting synthetic-resin coating, furnished in three parts, to be mixed at point of application.

Properties: Good resistance to acids and alkalies, certain organic compounds; good resistance to water, water vapor, weathering; Sward hardness of cured film, 35-50; non-aging; good impact resistance; will adhere to almost any surface without a primer; can be used on almost any surface, from metal to masonry; will withstand temperatures of minus 40 to 350 deg.

50 TIMES LONGER WEAR! WORKLON
Acid and Caustic Resistant INDUSTRIAL APPAREL
of DuPont ORLON • DuPont DACRON • Union Carbide DYNEL • LINT-FREE 100% ORLON
SAVINGS UP TO 93%

Worklon work clothes resist punishing acids and chemicals . . . actually outlast cotton and wool garments by **50 to 1** as proved in on-the-job tests under corrosive chemical conditions. No need for constant replacement of acid-damaged uniforms! Worklon apparel wears far longer, saves you as much as 93% in work clothes costs!

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"PROOF of THE FINISH is in THE OVEN" ...to a great extent.

We're inclined to base this statement on the testimonies of the many manufacturers we have been privileged to serve.

High volume, high quality finish production is almost a necessity everywhere today.

Users of our oven designs and installations tell us they are accomplishing this with comparatively low operating costs.

This makes for satisfaction all around.

Typical Quotes from Many of the Satisfied Users of LANLY Ovens in Diversified Industries

"Our paint appearance and gloss has improved considerably since we installed the New *LANLY BAKE OVEN.*"

R. O. R.

"We bake twenty-two colors in pastel shades on metal. With the LANLY OVEN we have experienced highly satisfactory results in obtaining uniform color and complete baking."

K. W. B.

We'll welcome the opportunity to discuss your drying and baking operations with you without obligation.

WRITE FOR THE CATALOG . . .

LANLY
FINISHING OVENS
THE LANLY COMPANY • 760 PROSPECT AVE
CLEVELAND, OHIO

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F., although some discoloration takes place above 250 deg. F. Mono-Seal films wash easily. Available in 22 colors. Final cure takes approximately four to seven days. May be baked, but this does not speed curing.

Application Procedure: Mix resin, activator, thinner. Use immediately. May be applied by spray, brush, roller coat.

Typical Applications: Walls, ceilings and floors in processing rooms; equipment and machinery; all types of wood, metal and plastic products.

For more data circle 11 on Reader Service Card

★ ★ ★

Bright Brass Process

Manufacturer: Yorktowne Special Products, 310 N. Franklin, Red Lion, Pennsylvania.

Description: Sol-Brite, a high-speed bright yellow brass process.

Properties: Brilliant yellow deposits from 15 to 300 a.s.f. Deposits at 0.0001 inch per minute or faster. Good leveling. Low free cyanide. Operates at low temperature (120-150 deg. F.) Stable color control. No nickel undercoat necessary. Plating time: about 5 minutes. Work to be polished may be plated in Sol-Brite, eliminating the need for separate high-speed brass and brass-flash tanks.

Operation: Use steel or lead-lined tank. Add chemicals as specified to water that has been heated to 130 deg. F. Dummy plate for 12 hours at 5 a.s.f. Filter with activated

On tumble finishing equipment!

Grav-i-Flo again scoops the field with new lower prices for its standard line of finishing equipment and supplies. Now—gain Grav-i-Flo's experienced know-how plus lower prices—and *really* save! *Send for complete price lists* on 2 compartment machines in sizes 48″, 36″, 32″ and 24″!

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Dept. PF-2 • 400 Norwood Avenue, Sturgis, Michigan
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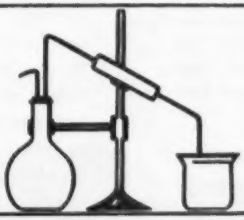
ED. WHITE, KLEM TECHNICAL DIRECTOR, DISCUSSES ANOTHER KLEM PRODUCT

"This month I want to introduce our new steam jenny cleaner and phosphatizer— MINIT-KOTE SJ"

This product eliminates steam gun maintenance — eliminates clogged nozzles — eliminates pre-mixing. Klem Minit-Kote "SJ" is a one-step operation with low equipment cost and low manpower requirements. No weighing or premixing are required — just measure and dilute.

We would like to have you try Minit-Kote "SJ" and to give you the opportunity, will ship trial quantities to you at drum discounts.



WRITE FOR OUR TECHNICAL BULLETIN

KLEM
CHEMICALS, INC.

14401 Lanson Avenue
Dearborn, Michigan

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carbon. Mild agitation helpful. 12-volt power source is preferred, although 6 volts may be used.

Typical Applications: Wire goods, furniture, hardware, and other products used in the manufacture of household equipment.

For more data circle **12** on Reader Service Card

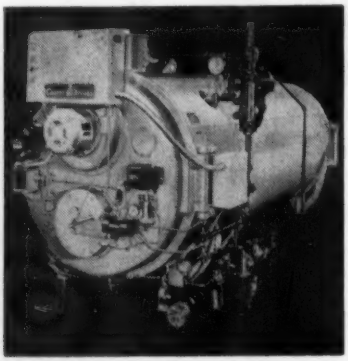
Flow-Coating Equipment

Manufacturer: William A. Finkbeiner, Box 36, Cheltenham, Pa.

Equipment: Two machines, one for flow coating small parts mounted on racks, the other for rotating the same racks until the paint has "set."

Operation: Small parts are mounted on reels by means of clips, wires, pegs or tapered pins. The reel is then mounted in Model 122 Flowcoater, where it is rotated by hand while nozzles squirt paint over the parts. The reels are allowed to remain in the closed flow coater for one minute to drain off excess paint in the solvent-laden atmosphere. After flow coating, reels are transferred to Model 814 rotator, which rotates the reels slowly for about 15 minutes, allowing the coating to set with an even flow-out, eliminating runs, sags, orange peel and dry areas. When baking is required, the reels can be transferred to an oven conveyor or placed on racks to be loaded into a batch-type oven. Parts need be mounted only once for the entire process.

PROTECTS this BOILER better than any other finish!



Sicon® SILICONE
HEAT RESISTANT FINISH

● SICON gray and SICON Maroon are used on all models of the "CB" line of packaged boilers, manufactured by Cleaver-Brooks, Milwaukee. SICON retains its color and gloss in the range of 500° F., far above the hottest skin temperatures of the boiler.

SICON is easy to apply—one sprayed on coat does the job. It dries fast, and protects the surface for the life of the unit. If your product generates sustained heat you need SICON, *the finish that has stood the test of heat and time.* Write today!

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B-6, WAUKEGAN, ILLINOIS

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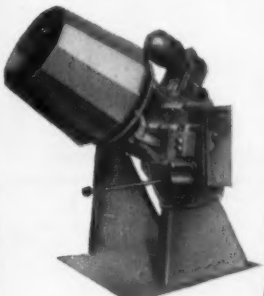
Electratilt Model With Polygonal Barrel

the new BAIRD *POLIACTION* barrel finishing machines



Hydratilt Model

designed for today's production line requirements

This new line of machines, available in two basic sizes, has been designed to meet an increasing demand for equipment of production line quality that can be economically adapted to a wide range of barrel finishing requirements.

Exceptionally "clean-limbed" in design, with all working parts and electrical equipment efficiently protected, these machines are at the same time compact, easy to keep clean, and easy to service. Modern finger-tip control and well-engineered drive and tilting mechanisms result in unusually smooth, fast and convenient operation that can mean important time and labor savings as well as close-limit control of product quality.

Equipment can be adapted readily to a wide range of barrel types, finishing methods and production needs.

Baird is one of the oldest and largest makers of barrel finishing equipment for production line service. Our long experience suggests that, when installing new equipment of this type, you first...

ask BAIRD about it.

With these important new features...

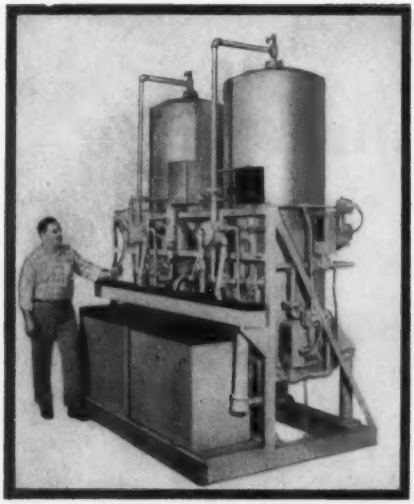
"Clean-limbed" for easy housekeeping • Time-saving finger-tip control • Electratilt power tilting or Hydratilt manual-hydraulic • Vari-sheave or vari-speed motor drive • Easy accessibility for adjustment or service

BAIRD about it

THE BAIRD MACHINE COMPANY • STRATFORD, CONN.

Write Department PF

For more data circle 375 on Postpaid Card



BARNSTEAD DEMINERALIZERS FOR METAL FINISHING IN CAPACITIES OF FROM 30 to 2500 G.P.H.

In rinsing or plating . . . in anodizing or make-up . . . in fact, wherever pure, mineral-free water is a necessity . . . Barnstead Demineralizers can save you money. First, because they are versatile: they come in all sizes from 30 to 2500 gallons per hour and in mixed-bed, two-bed, and four-bed models. Second, because they are low-cost in operation, producing pure water for as little as 5c per thousand gallons. Third, you get authoritative answers from Barnstead — with over 75 years' experience in ALL phases of producing pure water for all industrial applications.

NEW LITERATURE:

Catalog 127-A illustrates Barnstead's complete line of water demineralizers, and presents factual information which can help you reduce waste and save money.

Barnstead
STILL & DEMINERALIZER CO.

12 Lanesville Terrace, Boston 31, Mass.

For more data circle 376 on Postpaid Card

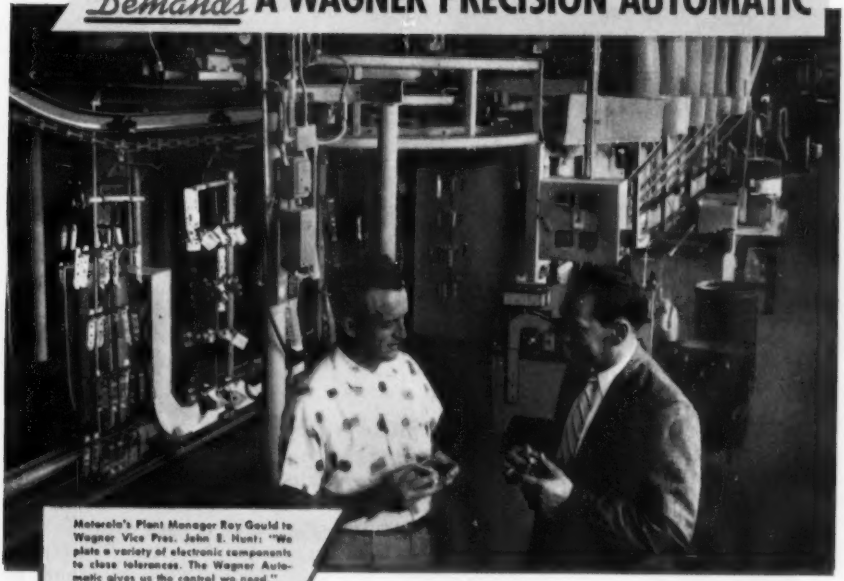
Construction Features: 1) Flowcoater. Requires approximately three gallons of finishing material, which is pumped through a filter (this removes

Model 122 Flow Coating Machine: for volume painting of small parts mounted on reels

Model 814 Rotator: no runs, sags, tears

MOTOROLA'S PRECISION PLATING

Demands A WAGNER PRECISION AUTOMATIC



Motorola's Plant Manager Roy Gould to Wagner Vice Pres. John E. Hunt: "We plate a variety of electronic components to close tolerances. The Wagner Automatic gives us the control we need."

Television and other electronic components are cadmium plated to specifications much more rigid than most military parts. That's why Motorola, Inc., after an intensive study of all makes of automatic plating machines in the plants of its suppliers and many other manufacturers, specified a Wagner Automatic for their critical work, a deposit of .0003" +25% —nothing. This precision plating machine, designed to solve Motorola's problems but using many standard components, now produces 95% of the requirements of the Communication and Industrial Electronics Division, proof of the versatility of Wagner design and engineering.

Plant Manager Roy Gould says, "Only the Wagner Automatic offers all the features desired, in addition to the greatest output per hour of the quality plating we demand. We like the smoothness of lift and transfer, the absence of impact, the elimination of a tremendous superstructure, and the foolproof hydraulic system. The simplicity of design and the standardization of parts and assemblies enable our mechanics to handle all adjustments and maintenance. The installation was fast—and the Wagner men performed their company's contractual and unspoken obligations competently and without hesitation. Since the first week or two of running, only minor adjustments have been needed."

Remember, only Wagner manufactures the equipment and processes the chemicals required by your plant. For information on Wagner automatic plating machines and materials handling engineering services, write today or call our representative in your area.

MANUFACTURERS AND PROCESSORS OF ALL METAL-FINISHING CHEMICALS, ANODES, AND EQUIPMENT

432 MIDLAND AVE., DETROIT 3, MICHIGAN

CHICAGO • CINCINNATI • CLEVELAND • INDIANAPOLIS • NEW YORK • SYRACUSE • GRAND RAPIDS

Wagner BROTHERS INC.

For more data circle 377 on Postpaid Card

dirt washed off the parts) and then through bronze nozzles, which are mounted on a horizontal manifold. 2) Rotator. Motor drives chain, which in turn drives eight reels at a time, each measuring 14 inches in diameter by 55 inches long. Both units have explosion-proof motors.

For more data circle **13** on Reader Service Card

Zinc Bath Purifier

Manufacturer: Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 5, Md.

Material: ARP No. 12 Zinc Purifier.

Description: A concentrated liquid additive for zinc plating baths.

Properties: Prevents accumulation of harmful impurities in zinc plating baths; precipitates heavy metallic impurities; removes carbonates at the same rate they are formed; reduces amounts of brighteners necessary to produce a bright plate.

How to Use: Dilute with water and add to bath. Determine how much is necessary by using sulfide test paper, which indicates by color whether enough of this additive is present in the bath.

Applications: Can be used in any zinc plating bath to reduce impurities and thereby produce a better plate.

For more data circle **14** on Reader Service Card

★ ★ ★

Paint Stripper

Manufacturer: Cleanite Products, Inc., 2469 Bristol Pike, Cornwells Heights, Pa.

Description: Cleanite 56, a liquid paint stripper.

Delavan Nozzles Save You Time and Expense in Your Metal Finishing Department

ORIFICE DESIGN—Produces better spray distribution, improved nozzle performance.

HEX SHAPED BODY—Simplifies nozzle installation and removal. Enables maintenance to use standard socket wrenches.

TAPERED INLET — Greatly reduces tendency for corrosive build-up at nozzle inlet. Provides longer, trouble-free service.

CATALOG 33 — Most complete catalog on industrial nozzles available. Provides application data, rating tables, recommended uses and complete nozzle specifications. Write for your copy today.

DELAVAN *Manufacturing Company*
WEST DES MOINES, IOWA

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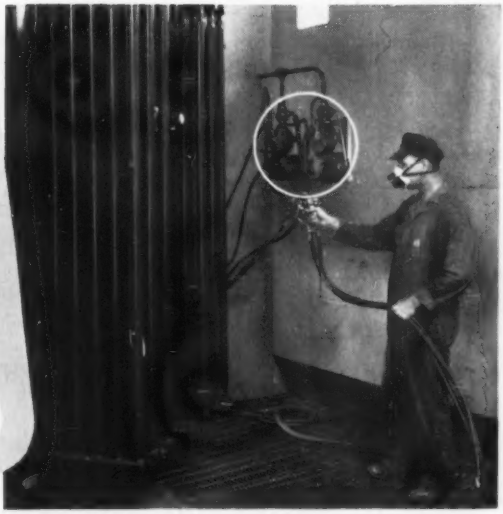
YOU GET A BETTER FINISH IN LESS TIME AT LOWER COST with SPEE-FLO HOT SPRAY SYSTEMS



(Photo courtesy General Electric Company)

Whether you are painting large units such as the transformer tanks shown above or any of a variety of smaller industrial products, you can be sure of getting the same advantages with the Spee-Flo hot spray method of finishing. Controlled hot spray means low, uniform viscosity—regardless of weather. This results in reduced overspray, faster application, and up to ⅓ savings in material. Other advantages include better coverage, faster dry, and elimination of runs and sags. If your job requires better finishing at the lowest possible cost, you'll want all the facts on Spee-Flo hot spray systems.

WRITE for literature and free booklet: "Why Hot Spray?"

SPEE-FLO
720 POLK AVE. HOUSTON, TEXAS

7464

For more data circle 379 on Postpaid Card

Characteristics: Requires no heat, works in one to two minutes at room temperature. Bath is said to be long lasting. Liquid is ready to use. Manufacturer reports that this material does not dissolve the paint, but breaks the bond with the metal surface, causing the paint to fall off. Solvent-resistant gloves should be worn during handling.

Typical Applications: Stripping lacquers, vinyls and baked enamels from aluminum, copper, brass, zinc, steel.

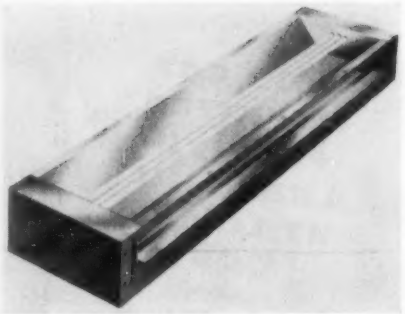
For more data circle **15** on Reader Service Card

★ ★ ★

Infrared Oven Sections

Manufacturer: Fostoria Pressed Steel Corp., Dept. 622, Fostoria, Ohio.

Equipment: The 50-000, 52-000 Series of Infrared Oven Sections.



Fostoria Infrared Oven Section: will take metal rods, quartz lamps or quartz tubes

Features: Will accommodate metal rods, quartz lamps or quartz tubes as heat sources. Two types of reflectors available: specular gold and aluminized steel. Reflectors are optically designed to distribute heat evenly.

Two basic sections are available.

Soft, Satin Etch... at a $5,500.00 annual saving!
Bob, we've got to lick this aluminum etching problem fast. During a day I add more etchant than we use for a fresh charge, just to maintain concentration
No worries there, Bob. AE-16® gives a soft satin etch. Just prepare the concentration for the degree of etch desired. With AE-16, you'll have to add only about half as much etchant, and you can operate your tank at 150° to 170° F., much cooler than you've been using. The special ingredients in AE-16 will prevent sludging and scale formation.
THE FOLLOWING MONTH...
Morning, Bob. Bet you the AE-16 etchant is still working as smoothly as the first week!
Is it! Here, read my report. We dump every two weeks now. We've cut consumption from 25 drums, to 12 drums a month. This year we'll save more than $5,000 on chemical costs alone.

They are identical in length, but differ in width. The 5½-inch-wide section is designed to be used with one or two heat sources, while the 11-inch model will accommodate one, two or three heat sources. Both models are available in various lengths.

The Fostoria units are bolted together, so that they can be changed to meet varying production requirements. Controls allow exact selection of temperature. "Open-end" design makes possible the addition of more sections when required.

For more data circle **16** on Reader Service Card

★ ★ ★

Roller Coater

Manufacturer: Black Brothers Company, Inc., Mendota, Ill.

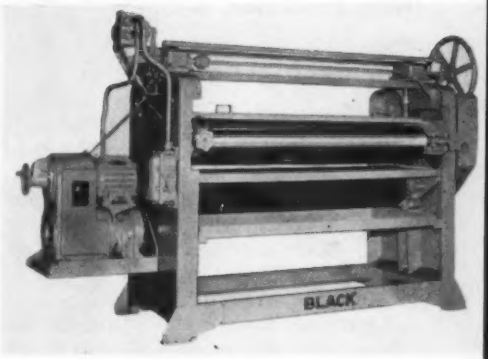
Equipment: No. 22-D Roller Coater.

Construction Features: Patented safety control; precision ground, solvent-resistant coating rolls; micrometer roll adjustment; opening between rolls adjustable from 0 to 4½ inches.

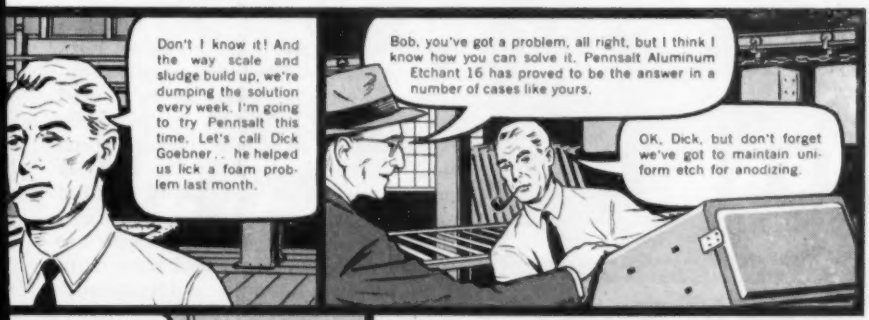
Available in 21 sizes, from 8 inches to 122 inches, in 6-inch increments.

Applications: Applying finishes to all types of flat materials.

For more data circle **17** on Reader Service Card



Black Brothers No. 22-D Roller Coater


Don't I know it! And the way scale and sludge build up, we're dumping the solution every week. I'm going to try Pennsalt this time. Let's call Dick Goebner.. he helped us lick a foam problem last month.
Bob, you've got a problem, all right, but I think I know how you can solve it. Pennsalt Aluminum Etchant 16 has proved to be the answer in a number of cases like yours.
OK, Dick, but don't forget we've got to maintain uniform etch for anodizing.
That's great, Bob.
And that's not all. On top of that, I figure using Pennsalt etchant saves us an easy $100 every month on maintenance and heating costs. Do you realize AE-16 let us lower the temperature of the etch tank 30°?

Dick does realize it. It's part of the knowledge he brings to customers' problems. No matter what your metal (or your metalworking problem), Pennsalt service gives you "A BETTER START FOR YOUR FINISH."

Pennsalt Chemicals Corp.
Dept. 568, 3 Penn Center
Philadelphia 2, Pa.

Pennsalt Chemicals
ESTABLISHED 1850

Send information on Pennsalt ☐ Metal cleaners ☐ phosphate coatings ☐ cold-working lubricants

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For more data circle 380 on Postpaid Card

Burnishing Compound

Manufacturer: Lord Chemical Corp., 2068 S. Queen St., York, Pa.

Material: Lorco "Lustre-All" coloring and burnishing compound.

Description: Imparts high gloss and color to any metal or alloy in a run of 45 minutes to one hour. Leaves no film and yields clean work.

Applications: For use with Lorco all-purpose fused-aluminum-oxide chips; will also work well with other coloring or burnishing media.

For more data circle **18** on Reader Service Card

★ ★ ★

Plastic-Coating Machine

Manufacturer: Aircraft Tools, Inc., 9030 Bellanca Ave., Los Angeles 45, Calif.

Equipment: A machine for coating metal parts with a hot-melt, protective strippable plastic coating.

Aircraft Tools' Plastic Coating Machine

Operation: Plastic coating material is heated and kept molten in an electrically heated, thermostatically controlled tank. The parts to be coated are attached by hand to magnetic hangers on a moving conveyor, which takes them down into the tank of melted plastic to any depth desired and then brings them out again. Parts that have made a complete cycle are cool enough to remove and have dripping strings removed automatically. Literature available from the manufacturer gives complete details.

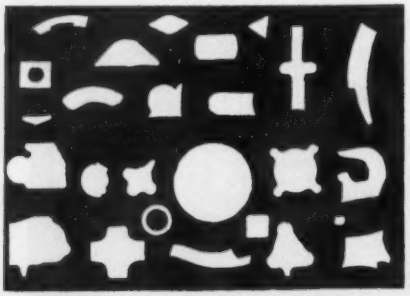
For more data circle **19** on Reader Service Card

★ ★ ★

Dual-Control Automatic Spray Gun

Manufacturer: Paasche Airbrush Co., Div. of Cline Electric Mfg. Co., 1909 W. Diversey Parkway, Chicago 14, Ill.

Equipment: Model 310 Automatic Spray Gun.



Pre-Cut Masks Speed Finishing

Brady Pre-Cut Masks are self-sticking — go on fast and accurately. Protect from finishing to inspection. Hundreds of shapes and sizes in stock, for paint spraying, baking, tumbling, etc. Specials made to order. Fast delivery. Distributors in 150 cities.

Write for free samples and Bulletin 160-C.

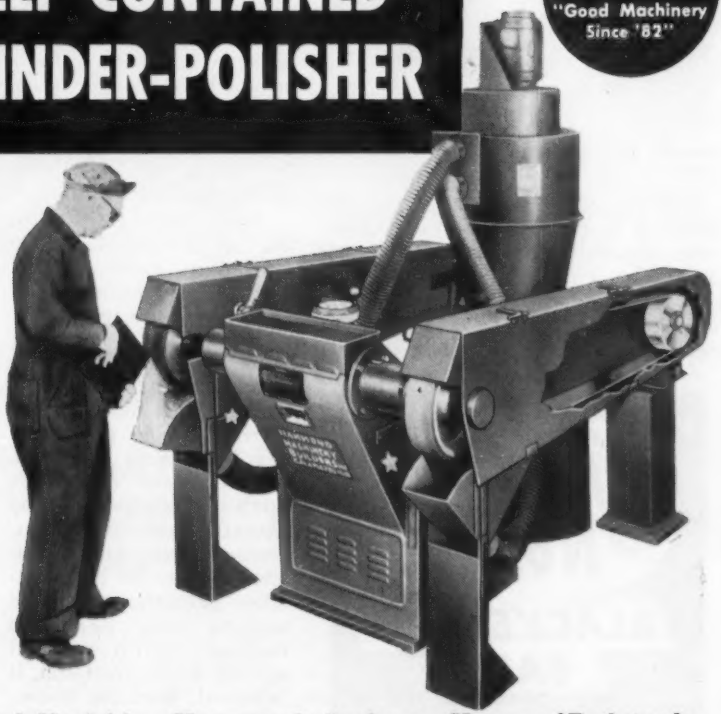
W. H. Brady Co.

746 W. Glendale Ave., Milwaukee 9, Wis.

For more data circle 381 on Postpaid Card

Modern SELF CONTAINED GRINDER-POLISHER

Hammond OF KALAMAZOO "Good Machinery Since '82"



Hammond Variable Speed (1500 to 3000 RPM) Polishing and Buffing Lathe. Models up to 50 HP available.

Hammond Cyclone DusKolector. One of a wide line of Cyclone and Filter types.

Hammond Backstands. 10 Air and Spring Tension Models to choose from.

Write for Catalog showing America's most modern and complete line of grinding and polishing equipment.

Hammond Machinery Builders INC.

1622 DOUGLAS AVENUE • KALAMAZOO, MICHIGAN

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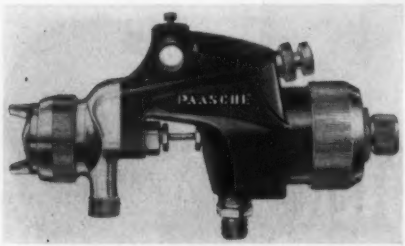


Paasche Dual-Control Automatic Spray Gun

Features: Infinite spray pattern adjustment is made possible by dual air-valve control (patents applied for). This control permits use of air from center air cap holes only, fan ports only, or a mixture of these two. This design feature is said to make possible infinite pattern adjustment with a minimum number of air caps. It is also possible to use less air pressure for atomization of paint than is needed for actuating the piston that controls fluid flow.

Specifications: Two hoses: one fluid, one air. Stainless steel fluid tip and stainless steel needle. Teflon packing is self lubricating. Teflon piston ring. Easy replacement of parts. Catalog 3, available from the manufacturer, gives complete details.

For more data circle **20** on Reader Service Card

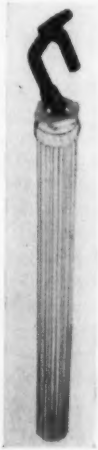
★ ★ ★

Chromium Plating Anode

Alpha Metals, Inc., Jersey City, N. J., has introduced a "Ripple Round" lead alloy anode, which is designed to give a maximum of plating surface area.

By adding a deep ripple, Alpha has increased the anode's surface area.

"Ripple Round" anodes provide ample cross section to handle extremely high current densities without overheating, the manufacturer states. Increased anode life is possible because the high densities permitted produce uniform lead peroxide coatings which protect against anode corrosion, it is stated. Running cooler, with greater rigidity, the problem of warpage is lessened.



Rippled Anode

All Ripple Round anodes are supplied with a choice of six hooks. Hooks are produced in different lengths and different conductor bar openings.

For more data circle **21** on Reader Service Card

★ ★ ★

Polyester Glass Tanks

Light- and heavy-duty polyester glass tanks offering resistance to the

Park No. 290
BLACKENING SALT

Black Oxide finishing for rust resistance and decorative parts. Speedy black coating in water solution with no electric current. Permanent black finish on ordnance parts, tools, aircraft, bearing races. Dazzling black decorative finish for television cameras, business machines, hardware, metal screens and machine parts. Excellent bond for paints and enamels. Simple one bath operation. Write for bulletin H-16. Park Chemical Co., 8078 Military Ave., Detroit 4, Mich.

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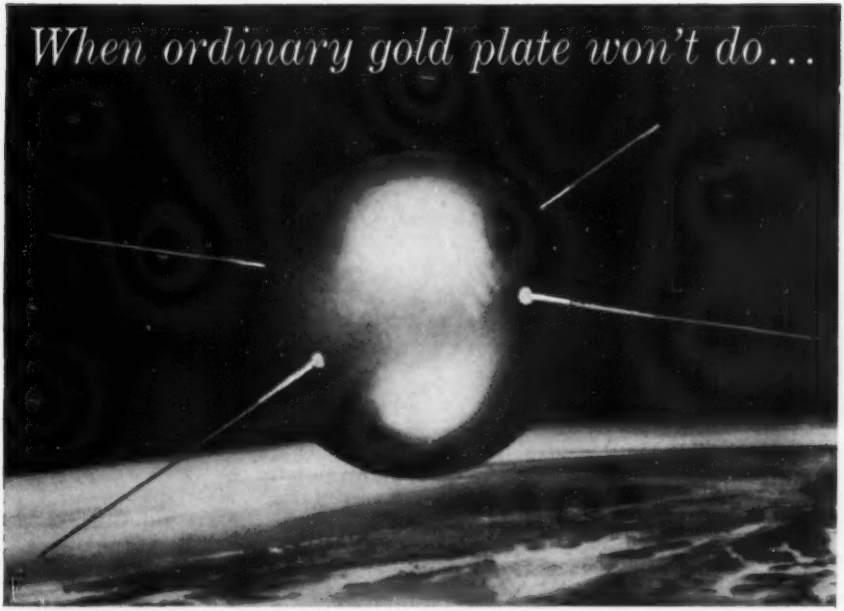

EARTH SATELLITE PLATED WITH Sel-Rex® BRIGHT GOLD

To provide maximum heat reflectivity and emissivity, the United States IGY Earth Satellites have been plated with Sel-Rex Bright Gold Process underneath their final coatings. This patented formulation was also used to plate most internal parts and instrument housings for temperature control.

As they revolve in orbit around the earth at 18,000 miles per hour, at altitudes of 200 to 1400 miles, the satellites will be subjected to temperatures ranging from −5° C to +45° C, *every 90 minutes.*

The Earth Satellites have been made of Magnesium, and plated with Sel-Rex Bright Gold, by Brooks & Perkins, Inc., the country's leading independent producer and fabricator of Magnesium.

PRECIOUS METALS DIVISION

SEL-REX CORPORATION

NUTLEY 10, NEW JERSEY • OFFICES: DETROIT – CHICAGO – LOS ANGELES

Manufacturers of Exclusive Precious Metals Processes, Metallic Power Rectifiers, Airborne Power Equipment, Liquid Clarification Filters, Metal Finishing Equipment and Supplies.

For more data circle 384 on Postpaid Card

Polyester Glass Tank: corrosion resistance

effects of brine and other corrosive solutions have been announced by Haveg Industries, Inc., 914 Greenbank Rd., Wilmington, Delaware. Tanks are available in almost unlimited sizes, even up to 30,000 gallons, and Haveg fabricates to specific requirements. These polyester glass tanks are also light, making for ease of installation, the manufacturer states.

For more data circle **22** on Reader Service Card

★ ★ ★

Paint-Saver Spray Gun

Manufacturer: Binks Manufacturing Co., 3118-40 Carroll Ave., Chicago 12, Illinois.

Equipment: Binks Model 19J spray gun, for use in paint circulating systems.

Model 19J: saves paint

Construction Features: Gun is designed so that a minimum amount of paint is in the gun at any one time; thus paint is saved when color changes are made and "bleed off" is necessary to clean the gun. The gun can be purged with only 2 to 4 fluid ounces bleed off. To accomplish this saving, the gun has been designed so that the amount of paint between material inlet and nozzle orfice is the smallest amount possible; and all pockets in the gun head capable of trapping paint have been eliminated.

The same type of construction is offered on the automatic Model 21J spray gun. This gun is constructed of forged bronze rather than aluminum —for automatic painting machines.

For more data circle **23** on Reader Service Card

★ ★ ★

Heating Panel

Manufacturer: Syntron Co., Homer City, Pa.

SURFACE FILTRATION IS NOT ENOUGH!

DEPTH FILTRATION

provides many successive filtrations in ONE operation with
CLARITY
EFFICIENCY
LOW COST

Models equipped with corrosive resistant alloys and materials for every electroplating and industrial solution from pH 0 to pH 14. Removes particles down to one micron in size.

Sethco Write for folder
FILTER PUMP UNITS

Sethco Mfg. Co. 2292 BABYLON TURNPIKE, MERRICK, L. I., NEW YORK

For more data circle 385 on Postpaid Card

Hard -- Tough -- Long-lasting -- no sharp edges or flat spots

SIMONDS ABRASIVE CO.

Borolon®
TRADE MARK

TUMBLING ABRASIVE

Borolon is fused crystalline aluminum oxide abrasive chips, *pre-tumbled* to give you a "run-in" media ready for top efficiency right away. Each chip particle is dense and solid, with multiple abrasive surfaces. New sizing standards provide wider range, greater accuracy. For all types of tumbling equipment—Send for bulletin ESA 236.

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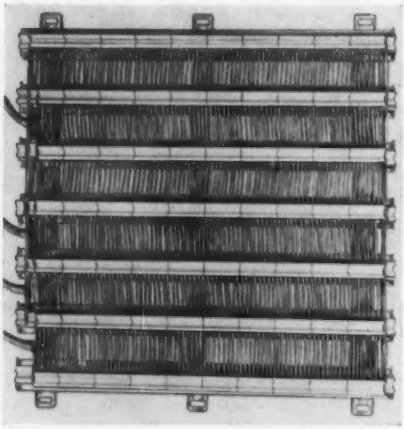


Syntron Open-Wire Infrared Heating Panel

Description: A heavy-duty infrared heating panel.

Construction: Flat wire panel with heavy-gauge bare wire to produce intense heat. Stainless steel frame holds ceramic insulator blocks and wire elements.

Typical Applications: Drying, baking, curing.

For more data circle **24** on Reader Service Card

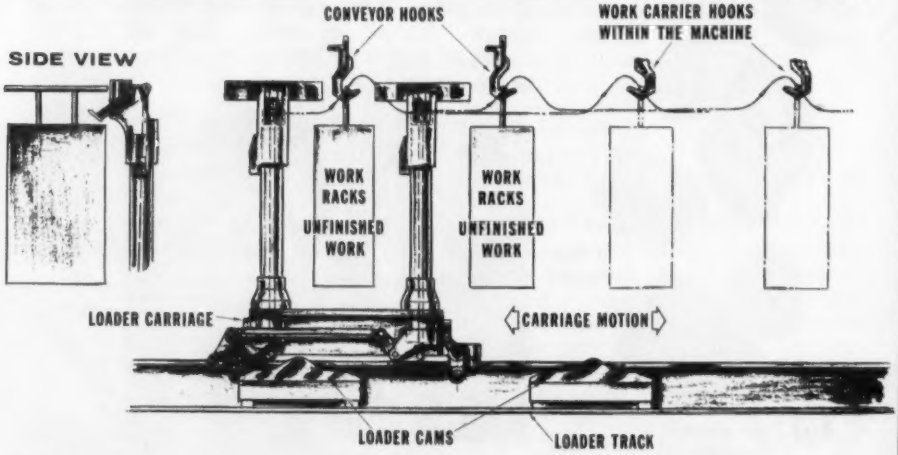
★ ★ ★

Transfer Mechanism

Manufacturer: Wagner Bros., Inc., Equipment Div., 7800 Dix Rd., Detroit, Mich.

Equipment: An automatic machine for unloading and transferring parts processed on conveyors.

Operation: Unit can be operated hydraulically or electrically. The mechanism can be adapted to transfer parts from conveyor hook to machine,



The transfer setup shown picks up the work from the two conveyor hooks, and transfers it to the work-carrier hooks — upon which the unfinished work is moved out of the loading station by the machine, and the finished work moved into its place. The transfer unit, which dwells during the machine index, then moves to the left, transferring the two finished work racks from the machine work carrier hooks onto the two empty hooks of the conveyor — which in turn had remained stationary during the preceding motion. The finished work is now indexed out of the conveyor loading station and the unfinished work moved into its place. Then the entire cycle repeats itself automatically.

EAK . . .
a high-boiling solvent with a future

In formulations for surface coatings, ethyl amyl ketone complements low-boiling MEK and medium-boiling MIBK by promoting better flow and gloss and eliminating dry overspray.

EAK possesses excellent blush resistance, good diluent tolerance and high solvency for surface coating materials. Its slow evaporation rate contributes to excellent flow-out, tends to minimize pinholing and bubbling in the film.

EAK has proved to be a valuable component of thinners for various types of coatings such as automotive refinishing lacquers, silk-screen printing lacquers and multicolor lacquers. Cellulose esters, vinyl polymers and copolymers, and almost all synthetic and natural resins are soluble in EAK.

Your Shell Chemical representative will be glad to discuss your specific solvent needs with you. Write for Organic Chemicals, a catalog of Shell solvents, resins and intermediates.

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SHELL

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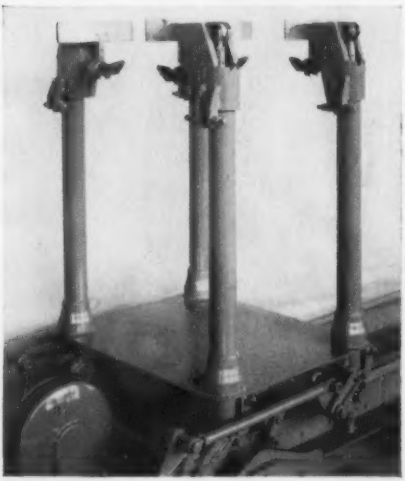


Test setup for automatic transfer unit. Reel, left, is used to supply power, but in a permanent installation a safety power bar supplies the power—working along lines of a trolley car. Cam, foreground, actuates all four of the pickup V-plates above, through a system of mechanical linkages. Slope of cam is amplified in the path of the V-plates.

from belt to machine and in other transfer operations.

Typical Applications: Practically any mechanized materials handling transfer problem.

For more data circle **25** on Reader Service Card

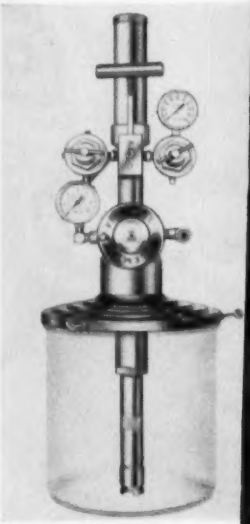
Portable Paint Pump

Manufacturer: Alemite Division, Stewart-Warner Corp., 1850 Diversey Parkway, Chicago 14, Ill.

Equipment: Versatal "Porta-Paint" Pump.

Features: Automatic agitation. Two-to-one ratio pump delivers constant supply of paint, even through long hose lines. Compact and lightweight.

Specifications: Air inlet, ¼-inch NPTF; outlet, ⅜-inch NDSM; material outlet, ⅜-inch NDSM. Entire unit weighs 35 pounds. Includes pump, cover, handle, air regulator to pump, atomizing air regulator and gage, and material pressure regulator and gage.



Versatal "Porta-Paint" Pump

Applications: Production painting and maintenance operations; short runs and metallic-base paints; applying lacquers, enamels, primers, sealers and strippable coatings, direct from five-gallon containers.

For more data circle **26** on Reader Service Card

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TRADE MARK
Synthetic PEARL ESSENCE with the natural look!
PEARLESCENT FINISHES
BAKE OR AIR DRY FOR
Your Product Made of Metal, Plastic, Wood or Glass.
Write for sample. Specify application and choice of vehicle.
Natural Pearl Essence Prices on Request
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Plants: Maine • New Jersey • Canada
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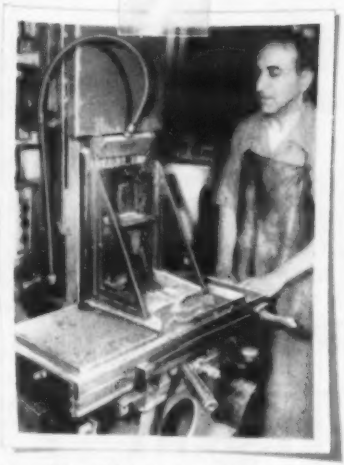
A 3M Case History Report

GRINDING PRODUCTION INCREASED 50% WITH "WETORDRY" BELTS



MANUFACTURER: Dictaphone Corporation

ADDRESS: Bridgeport, Conn.

PRODUCTS MANUFACTURED: Dictating Equipment

3M ABRASIVE USED: "WETORDRY" Tri-M-ite Cloth Belts

HOW 3M ABRASIVES ARE USED: Sizing bottom side of cast magnesium main frame of Dictaphone dictating machine, to remove burrs and casting imperfections for true flatness.

OPERATIONAL DATA ON 3M METHOD: Grit 60 "Wetordry Tri-M-ite" Cloth Belt is used on an Engleberg Huller BG8 Grinder. Constant flow of water is maintained over grind surface of the magnesium.

OPERATIONAL DATA ON PREVIOUS METHOD: A competitive brand of abrasive belt was used for the same operation.

PROVEN ADVANTAGES OF 3M METHOD: Production increased 50% per belt—from 900 pieces with the former belt to 1,350 pieces per 3M Belt with no loss in time or decrease in quality.

OTHER 3M ABRASIVE PRODUCTS NOW IN USE: "Three-M-ite Resinite" Cloth Belts are used to finish aluminum trim bands; "Tri-M-ite" Cloth "PG" Wheel used to pre-polish dictating belt mandrel ends.

WANT MORE INFORMATION? Send for free manual, "3M Method of Belt Grinding and Finishing." Just write on your letterhead to 3M Co., St. Paul 6, Minn., Dept. FH-28.

"Wetordry", "Tri-M-ite", "Resinite", and "Three-M-ite" are registered trademarks of 3M Co., St. Paul 6, Minn.
Export: 99 Park Ave., New York. Canada: London, Ontario

3M Coated Abrasives
"WETORDRY" CLOTH BELTS

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

For more data circle 389 on Postpaid Card

Packaging Tape

3 M's Paklon Film Tape No. 681

Manufacturer: Minnesota Mining & Manufacturing Co., 900 Bush St., St. Paul 6, Minn.

Description: Paklon film tape No. 681, a transparent pressure-sensitive tape for general - purpose industrial use.

Characteristics: Resists many acids, alkalies and solvents. Long aging properties. Adhesion of 40 ounces per square inch of width. Excellent holding and sealing properties. Good water vapor impermeability. Good instant adhesion—the ability to adhere tightly on light contact.

Typical Applications: Light to medium industrial packaging uses, other general industrial duty.

For more data circle **27** on Reader Service Card

★ ★ ★

Chemical Resistant Varnish

Manufacturer: Marblette Corp., 37-31 Thirtieth St., Long Island City 1, New York.

Material: Maraset Clear Varnish BV-790.

Application Procedure: Apply by brush or spray to clean, dry metal surface. Bake for 20 minutes. A single-component system, it requires no catalyst addition prior to use.

Properties of the Coating: Tough and flexible, it resists abrasion, chipping and chemicals at temperatures from minus 60 to 200 deg. C.

Typical Uses: Coating cans, drums, brass and other hardware, cosmetic containers, appliances; insulation for electronic components.

For more data circle **28** on Reader Service Card

★ ★ ★

Abrasive-Belt Polishing Machine

Manufacturer: Timesaver Sanders, P. O. Box 7446, Robbinsdale Station, Minneapolis 22, Minn.

Description: A 12-inch abrasive belt polishing machine.

Construction: Has 34-inch feeding

TRUE BRITE BRASS SOLUTION

A foolproof solution which has been in use over 6 years in light and heavy production.

- Ready To Use—Just Add Water
- No Variance in Color
- Trouble-Free—Little Supervision Needed
- Low Cost—Additions only once a day

Available in a variety of colors. Will match your sample.

Write for technical bulletin and prices.

TRUE BRITE CHEMICAL PRODUCTS CO.
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Write for new 1958 Catalog of Paint Testing Instruments and Equipment.

GARDNER LABORATORY, INC.
P. O. BOX 5728-P
BETHESDA 14, MARYLAND

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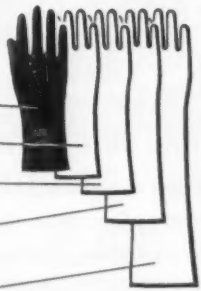
These Stanzoil® Milled Neoprene Gloves

. . . Guarantee Positive Liquidproof Protection in 103 Basic Oils, Acids, Caustics, Greases, Solvents

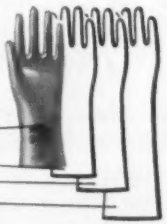
Black All Neoprene Stanzoils With Non-slip Grip

Model	Weight	Fingers	Length
N-31	Light	Straight	10½"
N-35	Light	Curved	10½"
N-32	Medium	Straight	11"
N-36	Medium	Curved	11"
N-41	Heavy	Straight	12"
N-44	Heavy	Curved	12"
N-51	Heavy	Straight	14"
N-33	Light	Straight	14"
N-54	Heavy	Curved	14"
N-71	Heavy	Straight	18"
N-73	Light	Straight	18"
N-74	Heavy	Curved	18"



White All Neoprene Stanzoils With Smooth Finish

Model	Weight	Fingers	Length
N-30	Light	Curved*	10½"
NW-31	Light	Straight	10½"
NW-32	Medium	Straight	11"
NW-41	Heavy	Straight	12"
NW-51	Heavy	Straight	14"
*Non-slip			



FREE Hand Protection Analysis... Send a description of your job requirements (length, dexterity, wear resistance, chemicals used, importance of safe grip, hot or cold temperature extremes, fatigue factor and sizes) to our "Hand Protection Clinic." New catalog and price list available on request.

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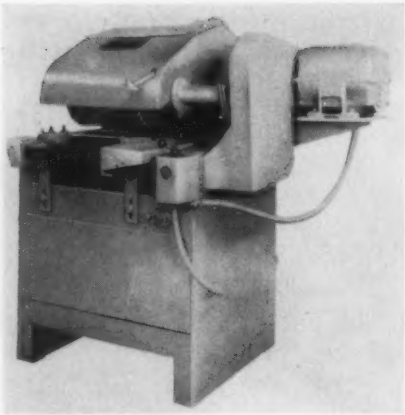
285 Tiffin Road
Willard, Ohio

For more data circle 392 on Postpaid Card



Timesaver 12-Inch Abrasive Belt Machine

height. Positive feed adjustment can be made quickly. Available with three types of feed tables. Also available with rolls to accommodate belts up to 18 inches.

Applications: Finishing, sanding and polishing. Used in tandem, two of these machines can handle deburring and polishing in sequence, by using different grit sizes. For any flat-surfaced material up to two inches thick.

For more data circle **29** on Reader Service Card

★ ★ ★

Temperature Control

Manufacturer: Partlow Corporation, 505 Campion Rd., New Hartford, N. Y.

Equipment: Model MFS temperature control.

Description: Designed by industrial design firm of Raymond Loewy Associates, this instrument was designed for improved readability as well as attractive appearance. Manufacturer states that it is accurate to within one-half per cent of scale range. Will sense, indicate and control industrial processes and appliances between minus 30 and 1100 deg. F. Available in ten

Partlow MFS Temperature Control: easy reading

FUNCTIONAL FINISHES!!

If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity—

Try Us!

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

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20800 CENTER RIDGE RD., CLEVELAND 16, OHIO

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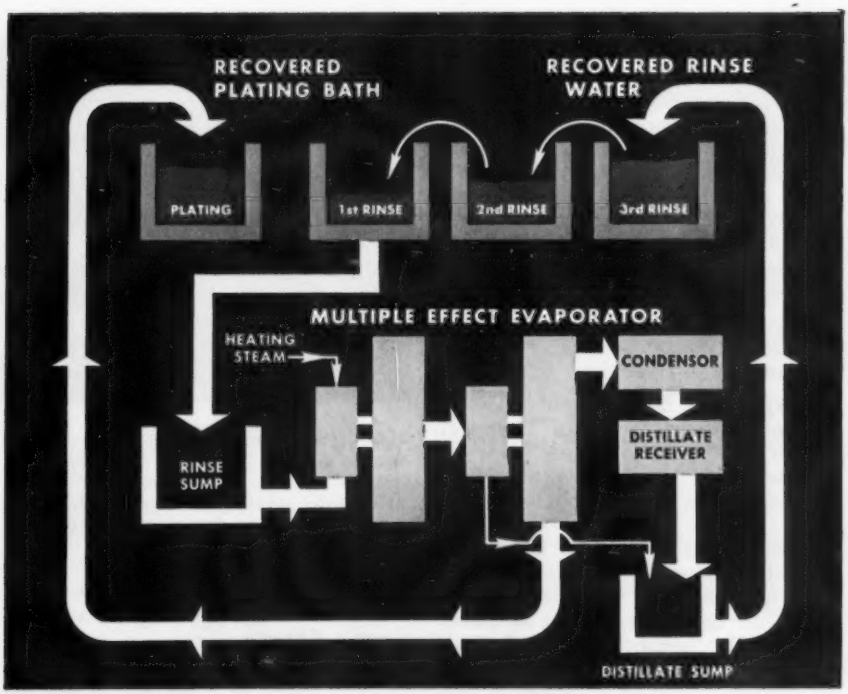


New recovery system cuts plating costs!

Industrial's Plating Bath Recovery Equipment provides complete recovery of acid and metal drag out losses, using a rapid evaporation process engineered to suit your operation. The savings can be fantastic . . . the system not only returns fresh plating solution to the bath and pure water to rinse tanks . . . it eliminates the high cost and trouble of neutralizing corrosive rinse water for disposal. In a typical case the replacement of solution and destruction of rinse water cost $12.46 per hour. **The Industrial System recovers the bath at a cost of $2.13 per hour.**

Unbelievable? . . . No sir! . . . these are systems designed by a company with a 30-year reputation for building the best in plating equipment. Let us prove it—our staff will be glad to make an analysis of your process, recommend equipment and estimate costs and savings.

Send for complete data

INDUSTRIAL

FILTER & PUMP MFG. CO.

5904 Ogden Ave., Chicago 50, Ill.

Please send me reprints of articles and literature on Industrial's Plating Waste Recovery Systems.

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

For more data circle 395 on Postpaid Card

different scale ranges. May be either flush or wall-mounted.

Typical Uses: Industrial ovens, furnaces, kilns, dryers, all types of process applications. Complete data given in Bulletin 320, available from the manufacturer.

For more data circle **30** on Reader Service Card

★ ★ ★

"Blanket" for Phosphate Baths

Manufacturer: American Chemical Paint Co., Ambler 14, Pa.

Material: Serseal, a chemical "blanket" for use on hot phosphate-coating baths.

Performance: Acts as a barrier to prevent the escape of steam and fumes; saves heat; reduces maintenance necessary on heating elements in phosphate coating baths; baths require less ventilation.

For more data circle **31** on Reader Service Card

★ ★ ★

Anodizing Process

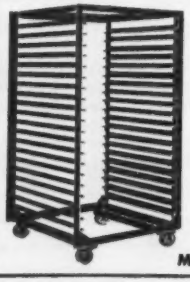
Developer: Hughes Aircraft Company, in conjunction with Anachrome Corporation, an affiliate company of Anadite, Inc., 10630 Sessler St., South Gate, Calif.

Process: A hard anodizing process for insulating aluminum chassis used for electrical circuits. Based on the Hardas Process.

Harold Tattan, process engineer at Hughes Aircraft, and Joe Trankla, of Anachrome Corporation, inspect a hard-anodized chassis for electrical circuits. Both men aided greatly in development of this anodizing process.

Characteristics: Anodic film produced has excellent dielectric strength: dielectric tests at 500 volts have indicated a resistance of several thousand megohms. Heat from transistors is equally distributed. The anodic film does not reduce need for an effective heat sink area, however. Developer states that chassis so treated eliminates the need for silicon, oil and mica washers.

For more data circle **32** on Reader Service Card



USE WILDER RACK TRUCKS

FOR

INCREASED PRODUCTION

AND

GREATER OVEN CAPACITY

Write for further information.

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MECHANIC ST. & ERIE R.R., PORT JERVIS, N. Y.

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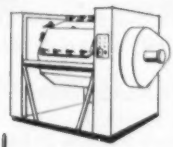
DEBURRING ALUMINUM CASTING	FINISHING CHROME—MOLLY CRANKCASE	DESCALING, POLISHING STEEL ALLOY SPRING

COMPOUND

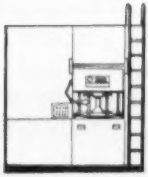
CHIPS

whatever your finishing problem

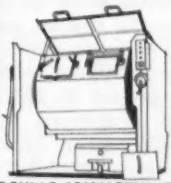
... IT WILL PAY YOU TO TAKE ADVANTAGE OF *Roto-Finish* PROCESSING SERVICE



DUAL-ACTION MACHINE



ROTO-MATIC



DOUBLE COMPARTMENT MODEL DW 45-36-2

If you're hand finishing...take a good, hard look at the dollars you're spending on hand finishing operations with today's high cost of skilled labor. We know Roto-Finish can save you up to 80% of these costs.

If you're barrel finishing already... you'll find Roto-Finish can reduce your finishing costs with the *right combination* of equipment, chips, compounds, and more important... processing experience. What's more, Roto-Finish processing will increase your production, give uniformity and precise dimensional control. We'll be glad to prove this to you *before you invest* in finishing equipment of any kind.

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For more data circle 397 on Postpaid Card

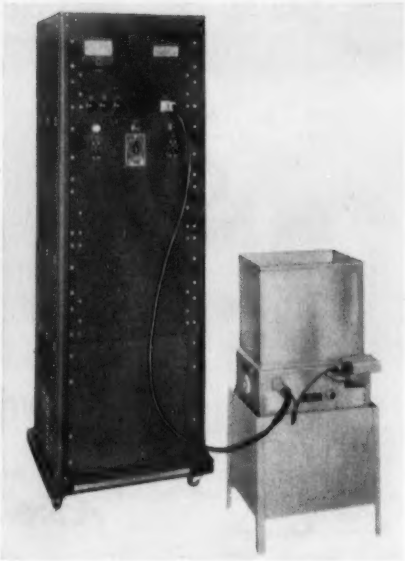
Ultrasonic Cleaning Machine

Manufacturer: Alcar Instruments, Inc., 17 Industrial Ave., Little Ferry, New Jersey.

Equipment: A 2-kilowatt ultrasonic cleaning machine.

Construction Features: Electronic generator delivers 2 kilowatts of power to magnetostrictive transducers welded into the bottom of the stainless steel tank. Tank dimensions: 9 by 14 by 13 inches deep. Capacity: 5 gallons. Water-flow switch prevents accidental operation without cooling water for the nickel transducers. A 0-15-minute timer shuts off the generator at any predetermined time. Switch permits bypassing the timer for continuous operation. Generator and cleaning tanks are available either rack mounted or in cabinets.

Typical Applications: Cleaning small parts, washing blind holes, removing radioactive contamination, cleaning printed circuits, other difficult cleaning jobs.



Alcar's 2-kw. Ultrasonic Cleaning Machine

For more data circle **33** on Reader Service Card

★ ★ ★

Non-Slip Coating

A non-slip coating can be rolled on to eliminate accidents and injuries caused by slippery footing.

The product is NSC, a compound that can be sprayed, brushed, or rolled on slip-hazard areas.

NSC is compounded of plastic resins and polymerized oils with aluminum oxide granules in constant suspension. These granules give traction even under oil or grease.

PLATER'S HELPER or CHEMIST?

Writing about my unique correspondence course in modern metal finishing, plater's helper E. Nichols says, "The lessons are a great help to me every day." Plating chemist George Day says, "It has been more help to me than any other source of information." Whether you use ELECTROPLATING KNOW HOW as a daily guide or an occasional reference, you're bound to profit! **Dr. Joseph B. Kushner, Electroplating School, 115 Broad Street, Stroudsburg 5F, Pa.**

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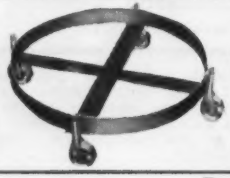

MORSE DRUM DOLLY No. 13

Perfect for vertical handling of open end drums. Easily handles loads up to 700 lbs. Built of 2½" steel for long life. 24" diameter; overall height 6½". Has four 3" dia. steel swivel casters for easy rolling into small areas. Rubber wheels available.

MORSE MFG. CO., INC. 762 W. Manlius St., E. Syracuse, New York **$10.90** FOB

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ARMORHIDE® coating on IBM 305 RAMAC

New metal coating looks like leather and is ten times more abrasive resistant.

Basically a textured plastic finish applied to metal and resembling leather, Armorhide is characterized by very high abrasion and chemical resistance. Similar to laminated Vinylite, Armorhide does not require expensive solvents and is sprayed on metal at a minimum of 60% solids at the gun.

Thus Armorhide is a new and entirely different kind of finish with physical and chemical properties unlike any other finish.

Write today for free booklet and sample panel.

JOHN L. ARMITAGE ARMORCOID & CO.

Synthetic Enamels, Paints, Varnishes, Lacquers

245 THOMAS STREET · · · NEWARK 5, NEW JERSEY

For more data circle 400 on Postpaid Card

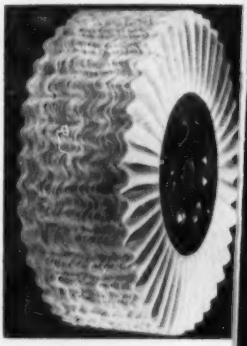
The manufacturer, Walton-March, 1935 Sheridan Road, Highland Park, Ill., reports that NSC is fire retardent,

Walton-March Non-Slip Coating: sure footing

having resisted temperatures up to 2,000 deg. F. without flaming. The waterproof coating can be cleaned with ordinary soaps, powders or ordinary detergents.

For more data circle **34** on Reader Service Card

Air-Cooled Bias Buff



Rhodes Air-Cooled Bias Buff

An Air Cooled Bias Buff has been introduced by James H. Rhodes & Co., 157 W. Hubbard St., Chicago, Ill. This patented buff features a 45 degree angle fabric biasing which is said to result in more strong warp fibers per inch of fabric on the working surface of the buff, and one-way warp direction for maximum cutting and polishing efficiency on all metals.

Uniform convolution pleats produce a wiping action and help to eliminate streaking, giving better fabric distribution and balance. Forced air ventilation through air scoops in the center of the buff produce a cooling action in operation. Buffs are piano wire stitched for greater safety when operating at maximum speed.

For more data circle **35** on Reader Service Card

★ ★ ★

Conveyorized Oven

Manufacturer: Grieve-Hendry Co., Inc., 1401 W. Carroll Ave., Chicago 7, Illinois.

IT WILL PAY YOU

For phosphating, degreasing, plating, cleaning, drying, etc., it will pay you—and pay you well—to investigate and USE the modern Dean Thermo-Panel Coil which TAKES THE PLACE of old-style pipe coils. Ask for complete data and prices.

DEAN THERMO-PANEL COIL DIVISION
DEAN PRODUCTS, INC. 622 Franklin Ave
BROOKLYN 38, N. Y. Tel. STerling 9-5400

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"GRIPALLOY"

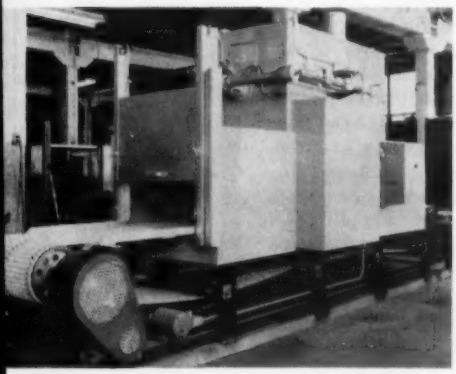
. . . Attractive satin sheen ETCHING PRIMER in black and colors . . . Often used as finish coat . . . Air dries in minutes . . .
. . . Amazing tight adhesion to 25 different metals as reported by a large electrical manufacturer.
. . . Excellent resistance to Salt Spray, Gasoline, and Solvents . . .

TENAX, Newark, N. J.
Lacquers—Enamels
Synthetics—Vinyls

For more data circle 402 on Postpaid Card

Equipment: An oven equipped with a continuous conveyor belt.

Features: Belt, driven by electric motor, is 36 inches wide, 30 inches off the floor. Speed is adjustable from two to ten feet per minute. Six-foot extension on each end for loading and unloading product being baked. Inside dimensions: 38 inches wide, 24 inches high, 15 feet long. Can be heated by gas, electricity, or steam.



Grieve-Hendry Conveyorized Gas-Fired Oven

Typical Applications: Baking and drying organic finishes on smaller articles that can be carried on a belt.

For more data circle **36** on Reader Service Card

★ ★ ★

Paint Shaker

Manufacturer: Miracle Paint Rejuvenator Co., 127 E. Ninth St., St. Paul 1, Minn.

Equipment: Horizontal Model Paint Shaker.

Description: Model No. MMH-2 will mix four quarts or two quarts and one gallon at a time. Mixing is accomplished without removing the can lid, by a mechanism that shakes the cans back and forth in short, rapid strokes. This model is powered by a 1/3-h.p. motor.

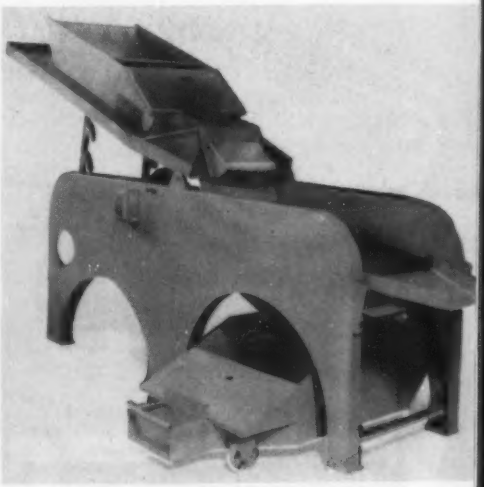
Miracle Horizontal Model Paint Shaker

For more data circle **37** on Reader Service Card

★ ★ ★

Mechanical Separator

Metal Finish, Inc., has introduced an industrial-type mechanical separa-



Mechanical Separator: various applications

tor that is said to be suitable for many applications.

It measures 96 inches long by 80 inches high by 37 inches wide.

Engineered for fast separation, the machine will handle light or heavy parts with ease, the manufacturer states. The unit has an adjustable stroke ranging from ¼ inch to 1¼ inches.

For a brochure outlining the machine in detail, write to Metal Finish, Inc., 412 Frelinghuysen Ave., Newark 12, N. J.

For more data circle **38** on Reader Service Card

★ ★ ★

Process for Plating Copper on Aluminum

Developer: Sylvania Electric Products, Inc., 12 Second St., Warren, Pa.

Process: A method of plating copper on aluminum strip and aluminum wire.

Characteristics of the Process: Permits plating aluminum strip in widths up to 10 inches and in thicknesses from 0.008 to 0.050 inch. Thickness of the copper plate itself ranges from a flash coating to 0.002 inch per side. Aluminum plated by this process can be tinned, soldered or formed without breaking the copper plate, which exhibits excellent adhesion characteristics, it is stated.

Typical Applications: Printed circuitry, bus-bar type conductors, and other electrical and electronic applications. Samples can be obtained from the company.

For more data circle **39** on Reader Service Card

★ ★ ★

Larger Can for Aerosol Paints

Krylon, Inc., has announced the largest seamed aerosol can ever made commercially for its spray enamels and coatings. It is a 17.8 ounce aerosol can.

Krylon's pressure-packaged finishes are now available in 17.8 and 6-ounce sizes.

The 17.8 ounce container will hold slightly more than a pint of paint.

Larger Container for Aerosol Paints

In addition to spray acrylic plastic and spray enamels, Krylon also markets zinc chromate metal primer.

For more data circle **40** on Reader Service Card

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

For more data on any product mentioned in PRODUCTS FINISHING circle numbers on card inside front cover.

ELTEMP
Solves
Temperature Control Problems
The Model T-34 immersion-type thermostat is effective in
ANY KNOWN CHEMICAL
solution within its temperature range (70°-210°F.). The power element is machined from virgin teflon.
Write Dept. T for full details and prices.
Elkhart Controls Company
Route No. 2 ELKHART, INDIANA

For more data circle 403 on Postpaid Card

Telephone collect for free brochure on
STRIPPING COPPER
with
McKeon's "Liquid Sulphur"
Economical, fast, non-electrolytic.
Sulphur Products Co., Inc.
McKeon Bldg., 621 W. Pittsburgh St., Greensburg, Pa.

For more data circle 404 on Postpaid Card

HERE'S BILL JACKSON ... A SUCCESS TWO WAYS!

Bill Jackson came home from the Air Force, skilled in the tools of modern airpower . . .

Bill found a job in the building industry. His progress has been steady . . . the last house he built was his own!

Somehow, though, he felt something was missing. Maybe it was the powerful roar of an engine run-up . . . or how it feels to talk airman's talk . . .

Maybe it was that sense of "belonging," of being part of a fine group of guys working together on a great Air Force team . . .

Then he joined the Air Force Reserve!

Now he's part of the team again . . .

Content that he's doing *two* big jobs . . . happy to be among those trained Air Force veterans who stand ready to lend a hand in the business of defense.

For information about YOUR place in the Air Force Reserve, call, write or visit your local Air Reserve Center

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Page 136

News of the Industry

New plants . . . company news . . .
new positions . . . meetings . . . necrology . . .

NEW PLANTS

The **Hill Acme Company**, Cleveland, Ohio, has built a new research building. This building is purposely separated from the manufacturing facilities so that development and experimental work can be conducted on new machines without interrupting production schedules in the plant.

The purpose of this Research Building is to process representative quantities of customers' material, thereby establishing and proving technique, quality and production available on Hill Acme's new machine tools. At any time, the tools in operation in the new building might be changed to make room for new or varied machines that the company develops.

Hill Acme manufactures hydraulic surface grinders, abrasive belt grinders and polishers, billet and scrap shears, forging, threading and tapping machines, metal cutting knives and machinery castings. The tools

Fig. 1—Exterior of Hill Acme's new research building. It is separate from manufacturing.

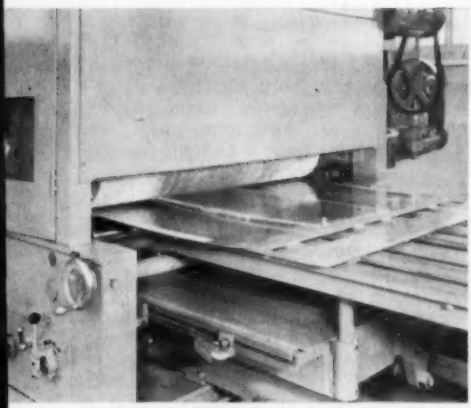

Fig. 2—Close-up of Hill Acme reciprocating-table-type polishing machine in operation.

presently operating in the Research Building are a 50-inch-wide reciprocating-table-type abrasive belt machine for grinding and polishing; a 60-inch-wide continuous-process pinch-roll-type abrasive belt machine for grinding and polishing; a new design 2-inch single-spindle HA threading machine; and one of the company's new bar-billet shears, completely automated with magazine and power feed table for giving square, accurate cuts of any required length at high production rates.

So that all types of ferrous and non-ferrous material, some being flammable, can be ground or polished on the abrasive belt machines, a special wet type dust collector is installed in the building. This collector can be connected by ducts to as many machines as necessary.

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Construction of a new development and testing laboratory has been announced by S. D. Fields, president of **Universal Paint & Varnish Inc.**, Bedford, Ohio, manufacturer of industrial finishes. When completed, the addition will more than quadruple the current technical section.

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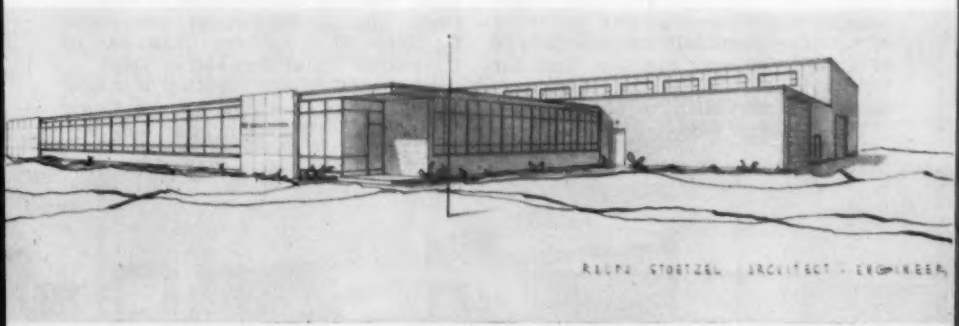
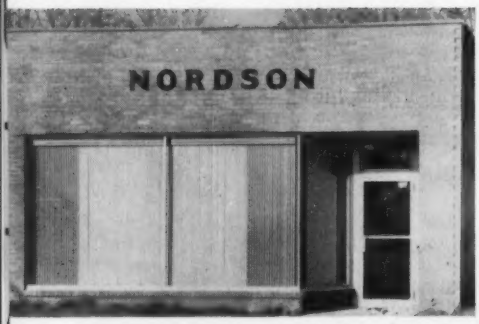
Crown Rheostat and Supply Company will move into new quarters in Centex Industrial Park, Highway 83 and Pratt Blvd., Elk Grove Village, Illinois, next summer, according to George E. Huenerfauth, president of the company. The new building will contain approximately 31,000 square feet of warehouse and manufacturing area plus an additional 7,700 square feet of offices.

The company will use the new facilities to manufacture plating and dipping tanks and related industrial equipment.



New building to be built for Crown Rheostat and Supply Company. Scheduled for occupancy in June, 1958, it will be used to make tanks and related industrial equipment.



Nordson's new eastern sales-service office

The **Nordson Corporation,** formerly Bede Products Corporation, has announced the establishment of an eastern sales and service outlet at 477 Bergen Blvd., Ridgefield, N. J.

Named Nordson Eastern Sales, Inc., the new company will function as sales and service center for all Nordson Corporation products including Airless Spray Painting equipment and Bede paint heaters.

Joseph A. Sanches, sales manager of the new company, will direct its operations.

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The **Diversey Corporation** has purchased a five-building plant in Waco, Texas.

Diversey, with headquarters at 1820 Roscoe St., Chicago, produces materials used for cleaning and polishing of machinery, metals and every type of equipment and utensils, and for treatment of metals to protect surfaces from corrosion.

The Chicago firm will relocate its Southwest District headquarters in Waco to localize production for the Texas area, which has been served by rail shipments from Chicago.

The new property includes two warehouses, an insecticide plant, employee's locker rooms and an air-conditioned office building.

COMPANIES

W. G. Overacker of Winchester, Massachusetts, has announced the formation of **General Vacuum Corporation,** of which he is president. The new company is at 400 Border Street, East Boston, Massachusetts.

Other officers of the new company are **R. A. Knight,** treasurer, and **D. J. Tobin,** vice president.

Mr. Overacker stated that the new company plans to concentrate its effort on engineering, development, testing and sales, and that arrangements have been made for Artisan Metals Products, Inc., of Waltham, to fabricate equipment to General's design. The new company plans to concentrate initially on the intermediate sizes of special high vacuum equipment, as well as developing pilot-plant induction and arc melting vacuum furnaces.

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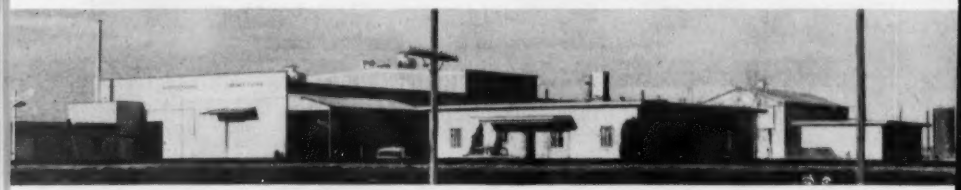
Pennsalt Chemicals Corporation of Philadelphia has been made exclusive sales representative for the metal processing machinery made by **White-Roth Machine Corporation** of Lorain, Ohio. The announcement was made by John M. Davidson, manager of Pennsalt's Metal Processing Dept.

The move brings together a maker of lubricants, coatings, phosphatizing compounds and metal cleaners and



Diversey's new plant in Waco, Texas: new headquarters for the company's Southwest District

strippers, and a manufacturer of metal processing equipment, which includes washers, coaters and driers.

The coordinated effort is being headed by **John W. Mordica.** Mr. Mordica's new title is manager of equipment sales for Pennsalt's Metal Processing Department. His headquarters will be in Lorain, Ohio.

Sales for the integrated line of chemicals and equipment will be handled nationally through sales engineers of the Pennsalt Metal Processing Department.

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A. N. Gustine, president of **King-Seeley Corporation,** of Ann Arbor, Michigan, and F. A. Trow, president of **Queen Products, Inc.,** of Albert Lea, Minnesota, have announced that arrangements have been concluded for the purchase by King-Seeley of Queen Products and its associated company the Albert Lea Building Corporation.

King-Seeley is a supplier of speedometers, gages, instrument panels, and other equipment for the automotive industry and also manufactures power tools, domestic fans, and electrical control devices.

Queen produces ice-making machines, both cube and flake models; finishing and deburring equipment; camping equipment consisting of portable ice boxes, gasoline lanterns and stoves; and oil and gas heaters for domestic space heating.

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More than 300 employees of the **Binks Manufacturing Company,** Chicago, attended the company's first Annual Service Award Dinner held recently at a Chicago hotel.

All employees having five or more years of service with the company were invited to the dinner. Employees received gold medallions inscribed with their names. Of these employees, 29 wore special boutonnieres signifying 25 or more years of service.

Highlight of the evening was a special medallion presentation ceremony in honor of the company's three most senior employees, **Chester R. Kranz,**

Burke B. Roche, (right) president of the Binks Manufacturing Company, Chicago, presents a diamond-jeweled gold service medallion to Chester R. Kranz, manager of Binks Manufacturing Company's Water Cooling Division and employee with the longest service record. Looking on (left to right) are the next two senior employees, Carl J. Braun, 34 years service, and William F. Stasch with 40 years.

45 year employee, **William F. Stasch,** 40 years, and **Carl J. Braun** with 34 years service. Burke B. Roche, president of the 64-year-old spray painting and water cooling tower equipment manufacturing company, made the presentations.

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Detrex Chemical Industries, Inc., has moved its Chicago offices.

The new offices are at 5875 N. Lincoln Ave., Chicago 45, Illinois. E. H. Ehlert is regional manager for the Detrex Western Region.

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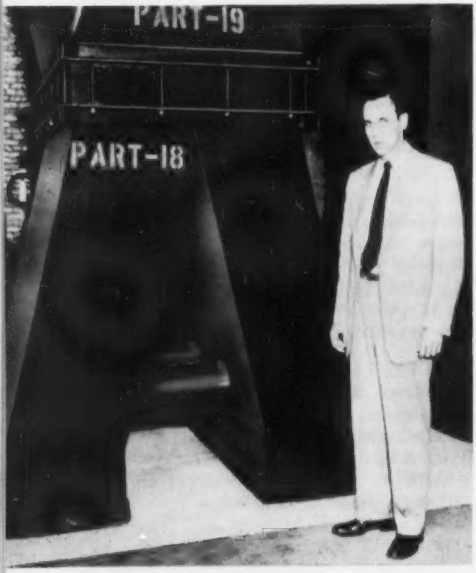
The new opportunities offered by the improvement in nickel supplies are being reviewed at a series of regional meetings **The International Nickel Company, Inc.,** has scheduled with its distributors during January and February in major industrial centers.

The conferences are a continuation of the company's annual sales meeting recently held in New York. At that meeting, J. Roy Gordon, executive vice-president of The International Nickel Company of Canada, Limit-

ed, and Lars R. Larson, vice-president and general sales manager of The International Nickel Company, Inc., the United States subsidiary, pointed out that the total availability of nickel to the United States in 1957 and the amount available for civilian use were the greatest in the history of the nickel business. They added that there would be more nickel available to the United States in 1958 than was the case last year, a situation which should give greater confidence to customers who wish to restore their old uses of nickel and to those who wish to include nickel in their long-range plans.

Distributor organizations participating in the current series of meetings are Williams and Company, Inc., with conferences for this group held in Pittsburgh Jan. 7, Cincinnati Jan. 9 and Cleveland Jan. 10; Whitehead Metal Products Company, Inc., New York, Jan. 13, Albany Jan. 15 and Philadelphia Jan. 17; Steel Sales Corporation, Chicago Jan. 21 and Indianapolis Jan. 23. Meetings with J. M. Tull Metal & Supply Co., will be held in Atlanta Feb. 10; Metal Goods Corporation, Houston Feb. 12 and Dallas Feb. 14; Eagle Metals Company, Seattle Feb. 22, and Pacific Metals Company, Ltd., Los Angeles Feb. 27.

Besides Mr. Larson, INCO officials participating in the regional meetings include H. G. Fales, vice-president and assistant to the chairman; J. M. Weldon, assistant to the vice-president; Albert P. Gagnebin, assistant vice-president and manager of the Nickel Sales Department; Harold Larsen, assistant manager of the Nickel Sales Department; C. J. Bianowicz and E. B. Bitzer, manager and assistant manager, respectively, of the Inco Nickel Alloys Department. Members of the two departments will outline for the distributor staffs the prospects for expanding established uses of nickel, developing new ones and stimulating increased nickel sales.



One section of a giant fume duct system made entirely of plastic is shown above. This entrance hood, 7 feet high with a 6-foot throat section, is fabricated entirely from acid-digested, asbestos-filled phenolic plastic, and was produced to handle corrosive fumes produced during metal refining operations. High strength and rigidity, plus high resistance to chemical corrosion are among the advantages claimed for this material. This hood was manufactured by Haveg Industries, Inc., of Wilmington, Delaware.

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Heatbath Corporation has announced the appointment of **International Chemical and Metallurgical Supply Corporation,** Fort Lauderdale, Florida as its exclusive sales representative in Florida and Latin America for the sale of its heat treating and metal finishing products. Laboratory facilities and technical service will be available through International Chemical and Metallurgical Supply Corporation for customers in this area.

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Glen A. Schwemer has opened his own distributorship in the Wisconsin area. Mr. Schwemer will represent the

Glen A. Schwemer

James H. Rhodes Company, manufacturer of coated abrasives, pumice, steel wool, buffs, and other products. He will also sell other finishing equipment and supplies.

Mr. Schwemer is a long-time member of the Chicago Electro-Platers Institute, and was at one time secretary of the Wisconsin Job Platers Association. He is a past president of the Milwaukee Branch, American Electroplaters' Society.

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Gardner Laboratory, Inc., Bethesda, Maryland, was host on October 29th, to a group of technical directors from the Coatings Research Group, Inc. The laboratory facilities of this organization, under the direction of John C. Moore, are also in Bethesda, Maryland. Coatings Research is conducting a valuable cooperative research program in the paint field.

After a guided tour of the new Gardner Laboratory building, the group spent considerable time inspecting instruments used for testing physical properties of coatings.

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Early in 1958, **Tropical Paint Company,** Cleveland, Ohio, a subsidiary of the **Parker Rust Proof Company,** will celebrate its 75th year in business. To mark the occasion, a diamond anniversary dinner was held December 9, at Cleveland's Carter Hotel. The dinner, part of a 3-day sales convention, was attended by 170 Tropical employees, officers and guests.

Robert W. Engelhart, chairman of the board of Tropical and president of the parent Parker Rust Proof Company, said: "Eighteen per cent of our employees have been with us for over

Dr. Mark W. Westgate of Gardner Laboratory demonstrates new instrument to members of Coatings Research Group, Inc. Left to right, Roger Lamontagne, Horace Bentley, George Gerwe, Oliver Buhl, Richard Keller, John Bauer, Willard Vasterling, George Schutte, Victor Danziger, Glenn Danziger, Clyde Schlesinger, Jr., John C. Moore.

R. W. Englehart

F. J. DeWitt, Jr.

25 years. Two employees have each given 50 years of service to Tropical."

Mr. Englehart also noted that, although new, modern buildings have replaced the original wooden structures, Tropical today occupies the exact site—1250 W. 70th St. in Cleveland—where it began three-quarters of a century ago.

The original company was organized in 1883 as an oil refiner, but the product line gradually shifted away from oil and grease products to roof coatings, quick-drying tars and asphalt-type paints.

"The bulk of our early business was with the farmer," said Mr. Englehart. "However, the growing emphasis on industrial development brought about an increased demand for specialized industrial coatings and related maintenance products. We expanded our manufacturing and research facilities to meet this demand and now concentrate on supplying heavy-duty paints and coatings for industrial maintenance."

In the Tropical line are paints for wood, metal, plaster, cement, brick and masonry, all especially formulated to handle a specific industrial protection problem. Nationally known Tropical brand names include Elastikote, heavy-duty exterior paints; Thermalite, the 1000-degree aluminum paint; Tocotone, Tropilux and Velvet Sheen.

Tropical also manufactures protective roof coatings, and many types of chemical and rust-resistant paints.

In 1950 Tropical became a subsidiary of Parker Rust Proof Co. **Fred J. DeWitt, Jr.**, Parker vice president, is president of Tropical.

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Oakite Products, Inc., manufacturer of industrial cleaning and metal-treating materials, has announced the establishment of two new divisions.

Rochester will be the headquarters of the new Upper New York State Division, which will comprise the technical field representatives and warehousing facilities now based in Albany, Utica, Syracuse, Binghamton, Elmira, Rochester, Buffalo, and Scranton, Pennsylvania. **Walter G. Sittmann**, formerly Oakite's Pittsburgh division manager, has been transferred to head the new division. He has established his office at Room 226, Fitch Building, 315 Alexander St., Rochester 4, New York.

J. P. Melhado

John P. Melhado, formerly a field representative in New York

W. G. Sittman

V. L. Baltzell

City, will now replace Mr. Sittmann.

The new Mid South Division will consist of Oakite representatives in Cincinnati, Nashville, Little Rock, Knoxville, Louisville, Evansville, Jackson, Shreveport, Memphis, and New Orleans. **Victor L. Baltzell,** representative in Dallas for the past 15 years, has been appointed manager of the new division. He will make his headquarters at Room 839, Commonwealth Building, 4th and Broadway, Louisville 2, Kentucky.

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De Soto Paint and Varnish Company, Garland, Texas, a division of United Wallpaper, Inc., Chicago, Illinois, has been awarded the Brame Gold Medal Award, signifying first place, for the best package design entered in the Art Directors Club of Denver annual competition to select the best examples of advertising art and creative design produced in the Middlewest during the past year.

Accepting the award for De Soto Paint and Varnish and for himself was the creator of the package design, Jerald O. Page, Dallas advertising artist and designer.

De Soto Paint's Award-Winning Labels

Growth from a one-room plant to one of the country's leading manufacturers of industrial chemicals for metal finishing was celebrated recently by **Northwest Chemical Company,** Detroit, Michigan.

Northwest Chemical Company recently celebrated 25th anniversary. Founders of the company are shown during ceremonies: left to right, H. J. McCracken, president and general manager; Helen M. Morell, vice president; and B. F. Lewis, secretary-treasurer and chief technician of research laboratory.

High point of the festivities was a dinner given for all employees by the management and the surprise presentation, by the employees, of a large oil painting for the firm's new lobby and engraved watches to the three founders, H. J. McCracken, president and general manager, Helen M. Morell, vice president, and B. F. Lewis, secretary-treasurer and chief technician of the firm's extensive research laboratory.

NEW POSITIONS

Edward J. O'Brien has been appointed technical representative for **Universal Paint & Varnish Inc.,** Bedford, Ohio, manufacturer of industrial finishes.

Chester F. Rental has joined **The Stanley Chemical Co.**, East Berlin, Conn., a subsidiary of The Stanley Works, as technical supervisor.

Mr. Rental was previously employed by Stanley in the laboratories of The Stanley Works and The Stanley Chemical Co.

Chester F. Rental

Clayton Kiser

The appointment of **Clayton Kiser** as a **Frederic B. Stevens** sales engineer has been announced by Frank Watt, Stevens sales manager.

Mr. Kiser comes to Stevens from the Frigidaire Division of General Motors, where he had been employed as an electrochemist.

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Ben R. Badeusz, formerly assistant to the vice president in charge of manufacturing at Great Lakes Plating, Chicago, has been appointed sales representative in the greater Chicago area for **Wagner Brothers Inc.,** Detroit manufacturer of chemicals, automatic plating and allied equipment.

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The Pioneer Rubber Company of Willard, Ohio, has announced the appointment of **Charles M. Allen** as southeastern area representative for the Industrial Products Division. He will handle the entire line of Stanzoil, Stanflex, Pacemaker and Sheergrip industrial gloves made by Pioneer Rubber.

Mr. Allen's area of activity will include Alabama, Georgia, Florida, North Carolina, South Carolina, Tennessee, Virginia and part of the state of Kentucky.

Charles M. Allen

M. T. Schimmel

Milton T. Schimmel has been appointed as West Coast sales engineer for Conforming Matrix Corporation, Toledo, Ohio.

Mr. Schimmel's office will be at 14017 S. Wilkie Ave., Gardena, Calif.

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A realignment of responsibilities, designed to strengthen and broaden the sales and technical service activities of **Diamond Alkali Company's** Electro Chemicals Division has been announced by Frank Chrencik, general manager of the division.

Lloyd R. McCoy, who has headed the division's technical service section at Painesville since mid-1956, returns to the company's national headquarters at Cleveland as assistant to the manager of chlorine and hydrogen sales.

Named to succeed him at Painesville as chief of technical service is **Wayne Inbody,** group leader in caustic soda and chlorine research for the past year and a half.

David H. Kinder has been named research and development chemist by **MacDermid Incorporated,** Waterbury, Connecticut, manufacturer of metal cleaning, plating and finishing chemicals. He will work in MacDermid's laboratory on a new line of chromate conversion coatings.

Walter F. Rhoades has been appointed vice president of marketing for **United Wallpaper, Inc.,** Chicago manufacturer of paint and coatings.

Mr. Rhoades, who joined United in 1949, has been general manager of United's De Soto Paint & Varnish division, Garland, Texas since 1954.

Samuel Alsop

David H. Kinder

Walter F. Rhoades

R. A. Barry

The directors of **Alsop Engineering Corporation** have voted the following changes in the company officers, to take effect immediately:

Charles E. Crowley will be chairman of the board of directors; **Samuel Alsop** will take over the office of the president; Elias Z. Ross continues as treasurer; Clark C. Morganson continues as secretary; Joseph Zoufaly continues as director.

Filling of the office of first vice president, formerly held by Samuel Alsop and of second vice president, formerly held by Walter W. Freystedt (recently deceased) was held in abeyance until a subsequent date.

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Appointment of **Herbert I. Chambers** as chief development engineer, **Consolidated Electrodynamics Corporation,** has been announced by Joseph H. Lancor, Jr., vice president.

Mr. Chambers had been assistant chief development engineer since November, 1956. Previously, he was supervisor of electro-mechanical development for the company.

Raymond A. Barry, formerly chief chemist of Electric Auto-Lite Co., Cincinnati, Ohio, has recently been appointed a sales engineer for the Cincinnati district by **Wagner Brothers, Inc.,** Detroit.

A graduate chemical engineer from the University of Cincinnati, Mr. Barry brings to Wagner more than 11 years of experience in metal finishing and electroplating operations.

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Promotion of two technical employees of **Diamond Alkali Company** to new positions of broader responsibility in this chemical producer's research organization at Painesville, Ohio, has been announced by Thornton F. Holder, director of research.

Dr. Clifford A. Neros becomes group leader in the Product Development Section of the Central Research Department.

James L. Foster is now Group Leader in silicate research for Diamond's Silicate, Detergent, Calcium Division.

Stephen V. Zavoico, president of the **Hartford Steel Ball Company, Inc.**, has announced the election of **Emmett N. Shutts** as vice president in charge of sales.

The **Chainveyor Corporation,** Los Angeles, has announced the appointment of **Edward P. Russell** as western division manager. He will headquarter in Los Angeles.

Emmett N. Shutts

Frank W. Donovan

Donald Ahrens

Edward P. Russell

Frank W. Donovan has been appointed to the board of directors of **Hanson-Van Winkle-Munning Co.**

Mr. Donovan is a partner of the law firm McClintock, Fulton, Donovan & Waterman in Detroit, Mich.

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Northwest Chemical Company, Detroit, has announced the appointment of **Rex MacKercher** as special representative on product application.

Mr. MacKercher will work with Northwest's customers in supplying information on products and methods developed in Northwest Chemical Company's laboratories. He will supplement Northwest's sales force.

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Tracy Gilbert has been appointed sales supervisor, Coated Abrasives Division, **Armour and Company,** Alliance, Ohio. In this capacity, he will supervise sales of both industrial coated abrasives and retail products. Mr. Gilbert's territory will be Toledo and the surrounding area of Ohio.

Donald Ahrens has been appointed sales manager of **Paasche Airbrush Company,** a division of Cline Electric Manufacturing Company, Chicago.

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The election of **James W. Hull** to the post of vice president of the **Reynolds Chemical Products Division of Stubnutz-Green Corporation,** has been announced by Morris Stubnutz, corporation president.

The Reynolds firm, currently undergoing a major expansion program, manufactures plastisols and organisols as well as vinyl foams for seating, clothing, furniture, automotive and industrial application.

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Walter T. McCoy, Sr., has retired after a career of nearly fifty years of work on paint finishing, dust and fume control and industrial ovens.

For the past 35 years Mr. McCoy has been with **The R. C. Mahon Company,** Detroit, Michigan, serving for 25 of those years as manager of the Industrial Equipment Division.

Ralph Fifield has been appointed manager of the Los Angeles Branch of **Binks Manufacturing Company,** Chicago manufacturer of spray painting equipment.

Raffi and Swanson, Inc., Wilmington, Mass., has announced the appointment of **Gordon W. Menges** to the sales department, in charge of new product development.

Ralph Fifield

Gail A. Smith

Edward J. Masterson

Gordon W. Menges

Gail A. Smith has been named sales manager of **Wyandotte Chemicals,** J. B. Ford Division, Minneapolis District.

Carl Dover, who has been Wyandotte Chemicals, J. B. Ford Division, Minneapolis manager since 1950, requested early retirement because of ill health.

Mr. Smith has both a practical and academic chemical background. He has spent seven years in industry and has recently done field research and "trouble-shooting," for Wyandotte Chemicals, J. B. Ford Division.

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Duralac Chemical Corporation has announced the appointment of **Lewis Morris** as sales representative in the New England territory. His home is in Mattapan, Mass.

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Industrial Systems Company has announced the appointment of **Donald A. Gilbert** of the Production Heating Equipment Company, 13231 Euclid Avenue, Cleveland 12, Ohio, as representative for Ohio.

Appointment of **Edward J. Masterson** as central district sales manager of **Body Brothers, Incorporated,** Bedford, Ohio, industrial paint manufacturer, has been announced by L. F. Body, president.

Mr. Masterson will be in charge of Body sales in the Ohio, western New York and western Pennsylvania areas.

MEETINGS

The **Third Annual Technical Session** of the **Southeastern Branch, A. E. S.,** with participation of the **Blue Ridge** and **Miami Branches,** will be held February 14 and 15 at the Dinkler Plaza Hotel, Atlanta, Georgia.

The following speakers will present technical papers: R. V. Vanden Burg, Aluminum Company of America; Dr. R. B. Saltonstall, technical director, The Udylite Corp.; Henry Mahlstedt, Metal & Thermit Corp.; Mr. Pike, Hanson-Van Winkle-Munning Co.; Clarence Sample, International Nickel Company.

A plant tour of Scripto, Inc., has been scheduled. An extensive program of ladies' entertainment has been planned.

Howard Bone is general chairman

A. E. S. 45TH ANNUAL CONVENTION,
Sheraton-Gibson Hotel, Cincinnati, Ohio, May 18-22, 1958
"Progress Through Education"

for the meeting; **Wilmont D. Tidd** is educational chairman, **M. M. Randman** is registration chairman, and **Justis U. Belville** is in charge of entertainment.

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The Dayton Branch, American Electroplaters' Society will hold its **Twelfth Annual Educational Session and Dinner Dance,** March 1, 1958, at the Hotel Biltmore, Dayton, Ohio.

The Educational Session will begin at 1:30 P.M. and will include the following subjects:

"Ultrasonic Cleaning," by Dr. Frank W. Hightower, Branson Ultrasonic Corporation, Stamford, Conn.; "The Anode's Side of the Story," by John B. Winters, Incar, Inc., Cleveland, Ohio; and a third topic yet to be announced.

The dinner and dance will begin at 6:30 P.M.

Tickets are on sale at $6.50 per person and may be obtained from the ticket chairman, **Byron Bowman,** Aeroproducts-Allison Div., General Motors Corporation, Vandalia, Ohio.

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At the **4th Annual Empire State Regional Meeting** of the **American Electroplaters' Society,** to be held at the Rochester-Manger, Rochester, New York, on Saturday, April 19th, 1958, a technical education session on Organic Finishing will be held simultaneously with an electroplaters' educational session.

The Empire State Annual Regional Meeting is a cooperative effort of the Rochester, Buffalo, Syracuse, Mohawk Valley (Utica area), Capitol District (Albany, Schenectady area), and Southern Tier (Binghamton-Elmira-Endicott area) Branches of the A. E. S., with the Rochester Branch acting as host this coming April. Three previous Regional Meetings have been held in Rochester, Buffalo and Syracuse. They were attended by between 200 and 275 electroplaters, wives and guests.

The program consists of an afternoon technical educational session, at which three papers are presented by nationally recognized metal finishing authorities, a simultaneous ladies program, and a banquet, entertainment and dance in the evening.

SOCIETIES

Chester G. Borlet

At the **A. E. S. Interim Meeting,** held Jan. 11, in Indianapolis, Indiana, the candidacy of **Chester G. Borlet** for the office of third vice president of the A. E. S. was announced.

Chester G. Borlet was graduated from Kent State University in 1935. He was associated with Harshaw Chemical Company in sales and technical service in the electroplating field. In 1955 he joined the Grand Rapids Brass Company, Grand Rapids, Mich., as technical director.

Mr. Borlet has been a member of the Detroit Branch, Los Angeles Branch, and the Grand Rapids Branch of the A. E. S. He has been active in each branch organization, serving in various capacities.

Fig. 1 — (Above) The Indianapolis Branch, host for A. E. S. Interim Meeting held on Jan. 11 in Marott Hotel, scheduled a dinner meeting to which delegates and alternates were invited. Photo shows group assembled for dinner. A. E. S. national officers are seated at the speakers' table in far background.

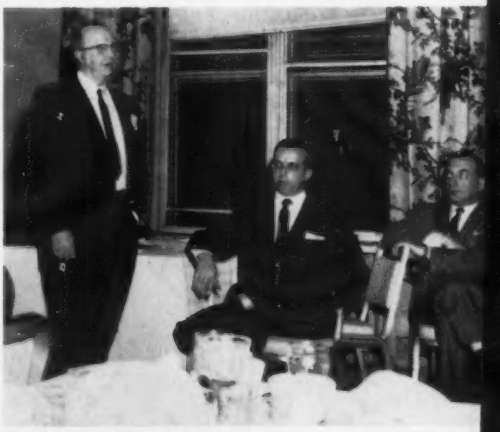

Fig. 2—(Right) Speaker at the Indianapolis Branch meeting, held on Jan. 10, was Dr. R. C. Gibson, vice president of the Parker Rust Proof Company, Detroit, Mich. Dr. Gibson addressed the group on "Phosphate Coating of Metal Surfaces for Industrial Use," showed slides to illustrate talk.

Fig. 3—(Below) A break in all-day A. E. S. Interim Meeting was provided by informal lunch attended by delegates and alternates. Some 24 branches were represented. (Photographs by PRODUCTS FINISHING.)

TRAINING COURSES

The **Spee-Flo Company** has initiated a series of hot spray painting clinics to acquaint finishing personnel and painting contractors with the latest methods in hot spray painting.

The first clinic was held recently at Wilkes-Barre, Pennsylvania. Sponsored by the local chapter of the Painters, Decorators and Contractors Association, the clinic featured informal discussion on finishing problems and a demonstration of the Spee-Flo Chieftain unit, a complete package painting system combining portability and long hose lengths.

A graphic demonstration of the versatility of the spray gun is one way to ensure immediate interest on the part of students attending a course on spray painting techniques. Irvin B. Thomas, DeVilbiss Company instructor, starts off a class by demonstrating that versatility in painting a legible sign with a spray gun. For more than 50 years, the company has conducted schools to train both the beginning and the advanced painter in every field on how to obtain better, more economical finishes with the spray method.

At the clinics the HydraAirless, the Spee-Flo system of spraying without atomizing air, the Little Chieftain and standard hot spray equipment will be demonstrated. Individual finishing problems will be discussed and theory of hot spray explained.

Further information on the clinics may be obtained by writing the Spee-Flo Company, 720 Polk, Houston, Texas.

★ ★ ★

The "final exam" at **Binks Manufacturing Company's** spray painting school provides a different way for students to use the techniques they have learned during the five-day course held at the company's plant in Chicago.

For the "exam," which takes place at the last session of the school, each member of the class spray paints a six-color picture of a pie-bald horse's head.

Six colors are used in this unusual spray painting operation. The color changes and material control required for this project effectively demonstrate the versatility of spray painting equipment.

Each student undertakes his project after a comprehensive "how-to" demonstration conducted by Binks' director of customer research and school instructor, William R. Brooks.

Conducted at Binks each month of the year except July and August, the course is designed to train the finishing foreman and the department superintendent. Instruction covers all phases of spray painting, including spray guns and their construction, paint-circulating systems, material-handling pumps, oil and water extractors and compressors.

Classes are limited as to number, so that each student has an opportunity to work with both manual and

automatic equipment under individual supervision. The classes scheduled for the 1958 spring term, to be conducted at Binks' Chicago plant, will be held March 3 through 7, April 7 through 11, May 5 through 9, and June 2 through 6.

Student's "final exam" is admired by classmates at Binks Manufacturing Company's spray painting school. The six-color illustration of a horse's head is done completely with spray painting equipment. The project gives students an opportunity to practice skills learned during week-long Binks course.

Reservation forms, and a booklet describing the course, may be obtained by writing B. J. Hedger, Binks Manufacturing Co., 3118-40 Carroll Ave., Chicago, Ill.

NECROLOGY

C. Dudley Clawson, president of **Ferro Corporation,** died January 4 from a heart attack while on a trip in Mexico City, Mexico. He had returned from Yucatan and was visiting a subsidiary of Ferro, Ferro Enamel De Mexico, S.A. He was 55.

A 27-year veteran of Ferro, Mr. Clawson had been president of the Cleveland concern, the world's largest producer of porcelain enamel, since 1947. Prior to that he held the post of vice president of sales, and earlier had served two years as managing director of Ferro Enamel (Brazil), S.A., another Ferro subsidiary.

MEETINGS of INTEREST to FINISHERS

Feb. 10-14. Committee Week, American Society for Testing Materials, Statler Hotel, St. Louis, Mo.

Feb. 14-15. Third Annual Technical Session and Banquet, Southeastern Branch, A.E.S., Dinkler Plaza Hotel, Atlanta, Ga.

Feb. 15. Annual Technical Session and Dinner Dance, Cleveland Branch, A.E.S., Cleveland, Ohio.

Feb. 15. Annual Banquet, Grand Rapids Branch, A.E.S., Pantlind Hotel, Grand Rapids, Mich.

Mar. 1. 12th Annual Educational Session and Dinner Dance, Dayton Branch, A.E.S., Hotel Biltmore, Dayton, Ohio.

Apr. 12. Annual Meeting, Mississippi Valley Branch, A.E.S.

Apr. 12. Annual Banquet, Baltimore-Washington Branch, A.E.S., Park Plaza Hotel, Baltimore, Md.

Apr. 14-15. Annual Spring Technical Conference & Exhibition, International Association of Electrotypers & Stereotypers, Inc., Carter Hotel, Cleveland, Ohio.

May 3. Annual Educational Session and Banquet, Boston Branch, A.E.S., Hotel Statler, Boston, Mass.

May 4. Annual Meeting, Toronto Branch, A.E.S., Sheraton Brock Hotel, Niagara Falls, Ontario.

May 19-22, 1958. 45th Annual Convention, A.E.S., Hotel Sheraton-Gibson, Cincinnati, Ohio.

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PRODUCT LITERATURE

45. Tack Cloth
Data on the Bond tack cloth, used in wiping off dust just before paint finishing. Bond Chemical Products Co., 2639 N. Clybourn Ave., Chicago 14, Ill.

46. Bright Nickel
Literature on Harshaw Nubrite, a bright nickel plating solution that is said to be simple to operate and control; be highly receptive to chrome; plate bright over a wide range; and have high tolerance to impurities. The Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

47. Purifying Plating Baths
Information on purifying plating baths by treatment with Darco Activated Carbon. Chemicals Div., Atlas Powder Co., Wilmington 99, Del.

48. Vacuum Metalizing Filaments
Information on high-density tungsten strands, designed to be used in vacuum metalizing. Sylvania Electric Products, Inc., Tungsten and Chemical Div., Towanda, Pa.

49. Rack Coating
Information on Unichrome Coating 218X, a vinyl plastisol specifically formulated for use in protecting plating racks. Metal & Thermit Corporation, Rahway, N. J.

50. Addition Agents
Information on Isobrite plating addition agents that produce plating of uniform brightness. Copper, nickel, zinc, cadmium and white brass. Wagner Bros., Inc., 400 Midland Ave., Detroit 3, Mich.

51. Clear Lacquer
Information on Nikolas 2105 Clear Lacquer, for protecting plated finishes from oxidation, marring, and discoloration. G. J. Nikolas & Co., Inc., 2880 Washington Blvd., Bellwood, Ill.

52. Nameplates
Bulletin No. 177 describes self-bonding anodized aluminum nameplates, how to apply, typical applications. W. H. Brady Co., 746 W. Glendale Ave., Milwaukee 9, Wis.

53. Acrylic Coatings
Performance and application information on acrylic-based coatings. The Varnish Products Co., 5204 Harvard Ave., Cleveland, Ohio.

54. Thickness Tester
Description of the Kocour Model 955 electronic plating thickness tester. Kocour Co., 4814 S. St. Louis Ave., Chicago 32, Ill.

55. Blackening Salt
Bulletin H-16 contains full information on the Park 290 process for applying a rust-resistant black finish to parts. Park Chemical Co., 8078 Military Ave., Detroit 4, Mich.

56. Cold Degreasing
Data Sheet No. SS-196 tells about Klearall 95, a cold degreasing solvent. Octagon Process, Inc., Staten Island 1, N. Y.

57. Conveyorized Finishing Systems
Information on finishing systems for painting articles that are turned out in large quantities. Industrial Ovens, Inc., 13811 Triskett Rd., Cleveland 11, Ohio.

58. Barrel Finishing Aluminum
Information on Altrex, a barrel finishing compound for aluminum deburring and radiusing. Wyandotte Chemicals Corp., Dept. 3035, Wyandotte, Mich.

59. High-Temperature Masking
Information on Shurtape, especially designed for use in masking articles that are subject to extreme heat in baking. Shuford Mills, Inc., Hickory, N. C.

60. Coated Abrasives
Information on Jewel Brand coated abrasives: belts, rolls, sheets, discs, specialties. Abrasive Products, Inc., South Braintree 85, Mass.

61. Cleaner-Phosphatizer
Technical bulletin describes Minit-Kote SJ, a steam jenny cleaner and phosphatizer that is said to eliminate steam gun maintenance and clogged nozzles. Klem Chemicals, Inc., 14401 Lanson Ave., Dearborn, Mich.

62. Buffers and Polishers
Catalog features 63 standard types and sizes of buffing and polishing machines, includes information on a line of dust collectors. Cincinnati Electrical Tool Co., 326 Mt. Hope Ave., Cincinnati 4, Ohio.

63. Heat-Resistant Finish
Data on Sicon Silicone heat resistant finishes, for finishing boilers, heaters, other articles subject to high temperatures. Midland Industrial Finishes Co., Dept. B-6, Waukegan, Ill.

64. Chemically Polish Aluminum
Details on Alchemize, a chemical polishing process that provides an economical method of obtaining satin to mirror-bright finishes on any shape of aluminum. Alchemize Corp., 1429 S. Talman Ave., Chicago 8, Ill.

65. Barrel Tumbler
Detailed information on a single barrel tumbler that is lined with kiln-dried and glued maple. H. W. Kramer Co., 120-30 Jamaica Ave., Richmond Hill 18, N. Y.

66. Flock Finishing
A 12-page bulletin illustrates profitable uses and applications for Cellusuede flock finishes. Cellusuede Products, Inc., 512 N. Madison St., Rockford, Ill.

67. Spray Painting Equipment
Catalog describes company's complete line of spray painting equipment: paint pumps, material filters, fluid pressure regulators, air transformers, spray guns, air pressure regulators, other accessories. Alemite Div., Stewart Warner Corp., 1850 Diversey Parkway, Chicago 14, Ill.

68. Barrel Finishing
Catalog describes barrel finishing equipment and materials: chips and compounds, dual-action, Roto-matic, and double-compartment barrel finishing machines. Roto-Finish Co., 3704 Milham Rd., Kalamazoo, Mich.

69. Industrial Finishes
Information on the desirable properties of finishes formulated with Exon Solution Resins. Chemical Sales Div., Firestone Plastics Co., Dept. 844D, Pottstown, Pa.

70. Copper Plating
Information on the advantages of using OFHC Copper Anodes. Metal Sales Dept., American Metal Climax, Inc., 61 Broadway, New York 6, N. Y.

71. Epoxy Resin Coatings
Interesting and valuable booklet entitled "Planning to Paint a Pyramid?" gives the full story on Epon resin-based coatings. Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York 17, N. Y.

72. Hot Spray
Booklet entitled "Why Hot Spray?" Spee-Flo Mfg. Co., Inc., Dept. PF-35, 720 Polk Ave., Houston, Texas.

73. Air Sanders
Data on portable air-operated sanding machines. Sundstrand Magnetic-Pneumatic Products, Div. of Sundstrand Machine Tool Co., 1020 Ninth St., Rockford, Ill.

74. Heating Plating Solutions
Illustrated bulletin on Vitreosil immersion heaters, which are designed to be used in plating solutions and pickling acids. Thermal American Fused Quartz Co., 18-20 Salem St., Dover, N. J.

75. Acrylic Enamel
Information on Duracron, a thermo-setting acrylic enamel developed for finishing refrigerators, home laundry equipment, ranges and air conditioning units. Pittsburgh Plate Glass Co., Industrial Sales Div., 1 Gateway Center, Pittsburgh, Pa.

76. Bright Nickel
Information on Udylite Bright Nickel Process No. 724, a liquid brightener that is said to give faster brightening. Udylite Corp., Detroit 11, Mich.

77. Industrial Gloves
Pioneer Rubber Company's Industrial Glove Line Catalog. Pioneer Rubber Co., 285 Tiffin Rd., Willard, Ohio.

78. Electrostatic Painting
Information on the Ransburg No. 2 Process of electrostatic painting. Ransburg Electro-Coating Corp., Indianapolis 7, Indiana.

79. Recirculating Ovens
Information on batch-type and conveyorized recirculating ovens. W. S. Rockwell Co., 2908 Eliot St., Fairfield, Conn.

80. Pearlescent Finishes
Information on baking and air-dry pearlescent finishes. Rona Laboratories, Inc., East 21st and East 22nd Sts., Bayonne 4, N. J.

81. Plating Solution Filtration
Folder tells how "depth filtration" does a better job of removing impurities from plating solutions. Sethco Mfg. Co., Inc., 2292 Babylon Turnpike, Merrick, L. I., N. Y.

82. Barrel Finishing Facts
Newly revised handbook on barrel finishing contains useful information on this process. Norton Co., Worcester 6, Mass.

83. Four Good Steps
Booklet entitled "Four Good Steps Toward Better Electroplating on Steel" tells about four ways to improve the average rinse tank. Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

84. Better Coatings
Information on the improved properties that can be obtained using organic finishes based on isophthalic acid. Oronite Chemical Co., 200 Bush St., San Francisco 20, Calif.

85. Automatic Buffing Machine
Information on Packer-Matic automatic buffing machines. The Packer Machine Co., Meriden, Conn.

86. Blast Cleaning
Bulletin 1403 tells how Pangborn Hydro-Finish can be used for cleaning, deburring, surface finishing, removing heat treat scale. Pangborn Corp., 5000 Pangborn Blvd., Hagerstown, Md.

87. Brass Plating Solution
Technical bulletin tells how to use the True Brite brass plating solution. True Brite Chemical Products Co., Box 31, Oakville, Conn.

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88. Automatic Plating Machine
Brochure tells about the Cycleflex, a fully automatic plating and anodizing machine that can be operated by one man. Lasalco, Inc., 2820 LaSalle St., St. Louis 4, Mo.

89. Satin Finish
Information on Lea Satin Finish Compounds. Lea Manufacturing Co., 16 Cherry Ave., Waterbury 20, Conn.

90. Industrial Cleaning Guide
File folder guide to best methods of cleaning metals prior to finishing. Magnus Chemical Co., Inc., 208 South Ave., Garwood, N. J.

91. Abrasive Belts
Catalog describes Michigan Red Coat abrasive belts, tells which belt to use for specific operations. Michigan Abrasive Co., 11910 E. Eight Mile Rd., Detroit 5, Mich.

92. Corrosion Insurance
Data on Miccrosol coatings for use in corrosion proofing racks, tanks and ducts. Michigan Chrome & Chemical Co., 8615 Grinnell Ave., Detroit 13, Mich.

93. Solving Problems
Booklet entitled "Case History Reports on 3M Abrasive Belts" tells how various plants have solved production problems with coated abrasives. Minnesota Mining and Mfg. Co., Dept. FH-127, St. Paul 6, Minn.

94. Silver Anodes
Data on shaped, extruded APW Silver Anodes, which are said to have controlled grain size that minimizes shedding. Engelhard Industries, Inc., American Platinum & Silver Div., 231 New Jersey Railroad Ave., Newark 5, N. J.

95. Rack Trucks
Information on Wilder rack trucks used to move parts that have to be baked in and out of batch-type ovens. Wilder Mfg. Co., Inc., Dept. H, Mechanic St. & Erie R.R., Port Jervis, N. Y.

96. Protective-Coating Service
Data folder describes company's facilities for applying specialized coatings to withstand specific types of corrosion. Company applies plastisols, lead linings, polyvinyl chloride, rubber linings, special paints, other corrosion-preventive linings and coatings. Alfred B. King Co., 224 Devine St., North Haven, Conn.

97. Cleaner for Porcelain Enameling
Information on Pennsalt 85, which is useful in cleaning metals prior to porcelain enameling. Pennsalt Chemicals Corp., Dept. 568, 3 Penn Center, Philadelphia 2, Pa.

98. Cleaning Compound
Information on Apex 764, a moderately alkaline composition containing deflocculators and emulsifiers for removing insoluble soils from ferrous metals. Apex Alkali Products Co., Main & Rector Sts., Philadelphia 27, Pa.

99. Magnesium Finishing
Bulletin No. 108-16 is a technical data sheet describing Turco processes for finishing magnesium. These data sheets discuss the purpose of the coatings, how to use them, types of coatings obtained, control procedures. Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

100. Automatic Plating
A 16-page folder describes 12 major automatic plating and processing installations. Anodizing, phosphatizing, printed circuit plating, barrel nickel plating, cleaning and pickling, zinc and cadmium plating, chromating, blackening, and bright dipping are among the processes featured. Frederic B. Stevens, Inc., 1800 Eighteenth St., Detroit 16, Mich.

101. Thickness Gage
The Elcometer, a thickness gage that quickly measures the thickness of magnetic coatings on iron or steel is discussed in a folder available from Gardner Laboratory, Inc., P.O. Box 5728 PF, Bethesda 14, Md.

102. High-Vacuum Valves
Bulletin 10-1 describes company's line of valves, baffles and traps specially designed for use in high-vacuum systems. Drawings show how these components are used in vacuum systems. Rochester Div., Consolidated Electrodynamics Corp., Rochester 3, N. Y.

103. Batch-Type Oven
Data sheet describes truck-loaded type production ovens available in various standard sizes that are suitable for a variety of tasks, including baking phenolic finishes on coils, finish baking of japans, lacquers and enamels. Despatch Oven Co., 619 S.E. Eighth St., Minneapolis 14, Minn.

104. Acid-Resistant Apparel
Acid-resistant industrial apparel including shirts, pants, coveralls, and laboratory coats is described in the 1958 Worklon Catalog. Worklon, Inc., Dept. PF, 253 W. 28th St., New York 1, N. Y.

105. Cold Phosphatizing
Information on how to save heat by using Spra-Bonderite formulated to give a superior coating at low temperatures. Parker Rust Proof Co., 2172 E. Milwaukee Ave., Detroit 11, Mich.

106. Corrosion Resistance of Copper
A 32-page reference booklet entitled "Corrosion Resistance of Copper and Copper Alloys" discusses nature of corrosive attack on these metals, includes tabulation indicating relative corrosion resistance of the principal types of copper and copper-base alloys when in contact with 186 different corroding agents. American Brass Co., Dept. PF, Waterbury 20, Conn.

107. Ribbed Polishing Belt
Data sheet describes a ribbed felt polishing belt said to result in more effective polishing action. Shaw Belting Co., 150 William St., Middletown, Conn.

108. Tumbling Abrasive
Form ESA-236 describes Borolon Tumbling Abrasive for barrel finishing. New sizing standards for the aluminum oxide chips are described. More sizes are available, and size is more accurately controlled. Simonds Abrasive Co., Taconey & Fraley St., Philadelphia 37, Pa.

109. Steam Traps
Bulletin No. 455-B describes Sarco Float-Thermostatic Steam Traps, Type FT. Includes discussion of construction features, sizes and capacities, how the devices operate. Sarco Co., Inc., 635 Madison Ave., New York 22, N. Y.

110. Paint Stripper
Data sheet describes Quick-Strip No. 8, a non-flammable paint stripper that is water rinsable, leaves a clean surface for subsequent operations. Mitchell-Bradford Chemical Co., Wampus Lane, Milford, Conn.

111. Roller Coating
Case-history of a sign company that is using roller coating to advantage is contained in a data sheet available from Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill.

112. Aluminum Cleaner
Description of Detrex AL, a special aluminum cleaning compound that is used in water solution for removal of oil and surface dirt from aluminum and magnesium without attack or harmful effect on the metals. Detrex Chemical Industries, Inc., Box 501, Dept. A-802, Detroit 32, Mich.

113. Degreasers
Catalog on degreasers shows models ranging from laboratory units and ultrasonic degreasers to large conveyorized machines. Ramco Equipment Corp., 811 Edgewater Rd., New York 59, N. Y.

114. Belt-Driven Plating Barrel
Advantages of using the newly designed Mercil-type belt-driven barrel plating cylinder are explained in a data sheet that tells how the belt drive allows total submersion of the barrel in plating solutions. Hanson-Van Winkle-Munning Co., Matawan, N. J.

115. Plating Waste Recovery
Literature on an evaporation process for the recovery of acids and metals used in plating and carried away by drag-out and rinses. Industrial Filter & Pump Mfg. Co., 5904 Ogden Ave., Chicago 50, Illinois.

116. Continuous Viscosity Measurement
Details on an ultrasonic system for continuous viscosity measurement and control, called the Ultra-Viscoson. Bendix Aviation Corp., Cincinnati Div., Dept. 390, 3130 Wasson Rd., Cincinnati 8, Ohio.

117. Controlling Plating Bath Temperatures
Complete information on the Eltemp, a temperature regulator with a chemically inert power element that measures temperature deep into the plating solution, actuates a switch that starts the flow of heating or cooling agent. Elkhart Controls Co., Route No. 2, Elkhart, Ind.

118. Metal Treatments
Data sheet describes four metal treatments: a zinc brightener, an oxidant for producing black oxide finishes, a brass blackener, and a tin-stripping agent. Sulphur Products Co., Inc., McKeon Bldg., 621 W. Pittsburgh St., Greensburg, Pa.

119. Sealer for Anodized Aluminum
Data sheet describes Sandofix ALU, a non-smutting sealer for anodized aluminum. Sandoz Chemical Co., Inc., 61 Van Dam St., New York 13, N. Y.

120. Gold Plating Electronic Parts
Reprints of an article by William F. Boyle, Federal Telephone & Radio Co., tell how a patented gold plating process has aided in producing improved electronic components. Sel-Rex Corp., Dept. PF, Nutley 10, N. J.

121. Finishing Equipment
Catalog A-658 describes and illustrates Mahon industrial equipment: complete finishing systems for porcelain enamel, synthetic enamel, lacquer, paint, varnish and japans; metal cleaning and pickling equipment; dry-off ovens and cooling tunnels; spray booth and air supply systems; flow and dip coaters; other production equipment. R. C. Mahon Co., Detroit 34, Mich.

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122. Spray Nozzles
Bulletin 91 gives specifications and flow rates for Spraying Systems' Wide-Spray Fulljet Spray Nozzles. Spraying Systems Co., 3229 Randolph St., Bellwood, Illinois.

123. Abrasive Tumbling Compound
Information on No. 1A Compound, recommended for fast cut down on castings and for rough grinding on all metals. Grand Rapids Tumbling Supply Corp., 1750 Elizabeth, N.W., Grand Rapids, Mich.

124. Cleaning Solvent
A sixteen-page booklet about Dow perchlorethylene, a solvent for vapor degreasing and cold cleaning of metal parts. Applications, advantages, properties and degreasing information. Dow Chemical Co., Midland, Mich.

125. Handbook on Barrel Finishing
Contains 52 pages of facts about barrel finishing. Shows typical installations, tells how to select the proper finishing barrel, includes detailed cost chart on finishing typical parts. Almco, Queen Products, Inc., 82 Marshall St., Albert Lea, Minn.

126. Chromate Coatings
Literature and data on Iridite chromate conversion coatings, which are used as a paint base or as a final decorative and corrosion resistant finish. Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 5, Md.

127. Polishing Wheel
Information on the new Uniflex Abrasive Polishing Wheel. American Buff Co., 2414 S. LaSalle St., Chicago 16, Ill.

128. Corrosion Preventives
Information on Alodine 1200, Lithoform Z and Permadine, conversion coatings that protect various metals from corrosion with or without subsequent painting. American Chemical Paint Co., Ambler 14, Pa.

129. Buffing Irregular Shapes
Information on the No. 501 Finger Buff, said to be very useful in buffing large irregular shapes without excessive wear on any part of the face. Geo. R. Churchill Co., Inc., Dept. PF, Hingham, Mass.

130. Automatic Dip Processing
Information on Cincinnati equipment for automatic dip processing. Cincinnati Cleaning & Finishing Equipment Co., 2008 Hageman St., Cincinnati 41, Ohio.

131. Airless Automatic Gun
Data sheet tells about features of the AG-100 Automatic Spray Gun, includes drawing to show working parts. Nordson Corp., Amherst, Ohio.

132. Phosphate Coating
Literature on Ty-Bond phosphate coatings. Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3, Ohio.

133. Hot Spray
Booklet entitled "New Efficiency from Hot Spray." DeVilbiss Co., Dept. 331-A, Toledo 1, Ohio.

134. Immersion Heaters
Bulletin on quartz immersion heaters for heating acids, alkalies, other corrosives. Glo-Quartz Electric Heater Co., Inc., Willoughby, Ohio.

135. Parts-Finishing Process
Information on the Spin-Finish method of pre-plate finishing brass, zinc-base and aluminum die cast parts. Grav-I-Flo Corp., Dept. PF-1, 400 Norwood Ave., Sturgis, Mich.

136. Buffing Lathes
Catalog describes various types and sizes of variable speed polishing and buffing lathes. Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

137. Barrel Finishing Machines
Data on the new Baird Poliaction barrel finishing machines. Baird Machine Co., Dept. PF, Stratford, Conn.

138. Demineralizers
Catalog 127-A illustrates Barnstead's complete line and presents information that can help to reduce waste and improve quality. Barnstead Still & Demineralizer Co., 12 Lanesville Terrace, Boston 31, Mass.

139. Strippable Spraybooth Coating
Liquid Envelope No. 49-03 F.X., which is based on non-flammable solvents, sprays on easily, strips off easily. Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J.

140. Spray-Bake Conveyor Machines
Descriptive literature on Capitol high-speed electric spray-bake conveyorized finishing machines. Capitol Machine Co., 36 Balmforth Ave., Danbury, Conn.

141. Degreasers
Literature describes Blakeslee conveyorized degreasers with patented anti-diffusion chamber that cuts down evaporation of solvent. G. S. Blakeslee & Co., 1844 S. Laramie Ave., Chicago 50, Ill.

142. Rhodium Plating
Information on rhodium plating solutions that do an excellent job in plating printed circuits. Can be applied in heavy deposits, up to 100 milligrams per square inch. Sigmund Cohn Mfg. Co., Inc., 121 S. Columbus Ave., Mount Vernon, N. Y.

143. Textured Plastic Finish
Booklet tells about Armorhide, a textured plastic finish that looks like leather, has good abrasion and chemical resistance. John L. Armitage & Co., 245 Thomas St., Newark 5, N. J.

144. Spray Washing Nozzles
Catalog 33, a complete catalog on industrial nozzles. Application data, rating tables, recommended uses, specifications. Delavan Manufacturing Co., West Des Moines, Iowa.

Classified Advertising

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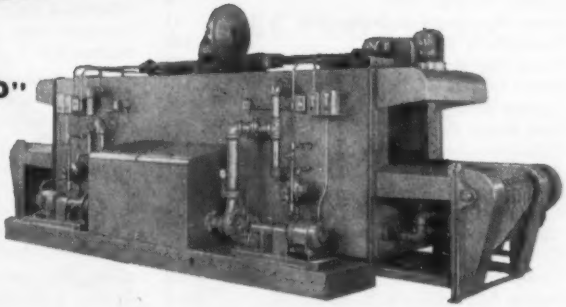

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Because of this "foresighted design" many BLAKESLEE washers that were built over 30 years ago are still fulfilling time and motion requirements and modern automation needs. These machines are also mute testimony to BLAKESLEE quality and rugged construction which remains a basic requisite of all BLAKESLEE products.

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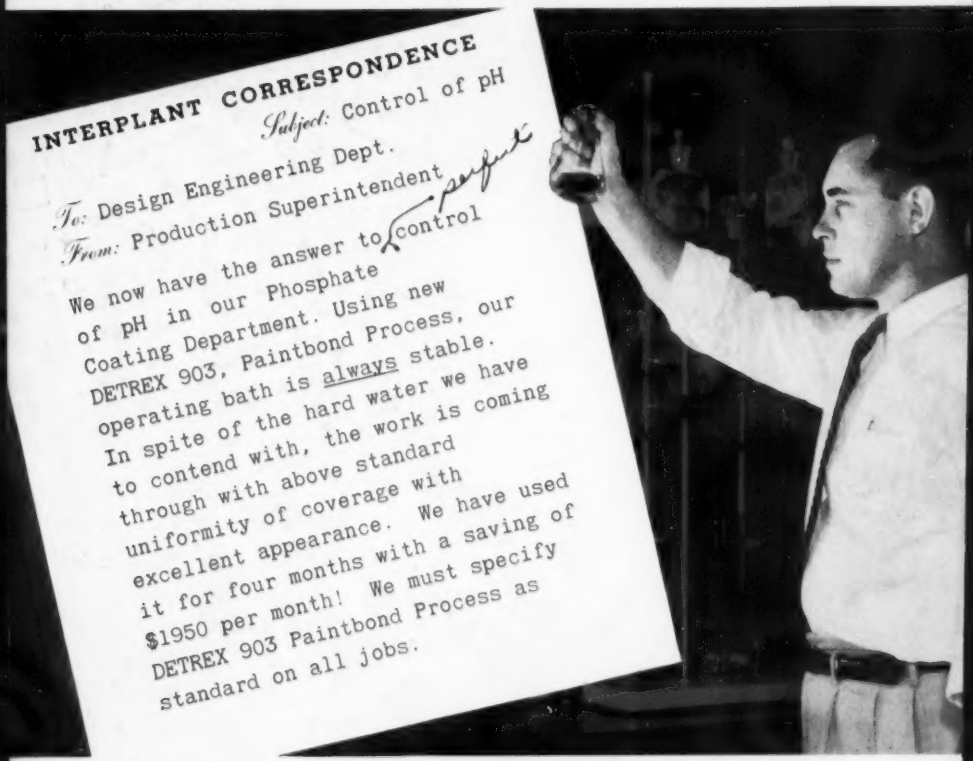
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To: Design Engineering Dept.
From: Production Superintendent
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